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Organisational Intention to Use Forensic Accounting Services in Detecting and Preventing Fraud: The Case of English Local Authorities

Mohd Hadafi Sahdan

A Thesis Submitted to the University of Huddersfield in Partial Fulfilment of the Requirements for the Degree of Doctor of Philosophy

The University of Huddersfield
University of Huddersfield Business School

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ABBREVIATIONS

Abbreviations	Term
ACCA	Association of Chartered Certified Accountant
ACFE	Association of Certified Fraud Examiners
ACFM	Accredited Counter Fraud Manager
ACFS	Accredited Counter Fraud Specialist
ACFS	Association of Certified Fraud Specialists
ACFT	Accredited Counter Fraud Trainer
AFFEI	American College of Forensic Examiners International
AICPA	American Institute of Certified Public Accountants
Alarm	Public Risk Management Association
ASA	Australian Auditing Standards
ASB	Accounting Standard Boards
BCFT	Benefit Counter Fraud Team
BFI	Benefit Fraud Inspectorate
BTOS	Bartlett's Test of Sphericity
C&AG	Comptroller and Auditor General
CFS	Counter Fraud Specialist
CFT	Corporate Fraud Team
CICA	Canadian Institute of Chartered Accountants
CIIA	Chartered Institute of Internal Auditors
CIMA	Chartered Institute of management Accountant
CIPFA	Chartered Institute of Public Finance & Accountancy
CPA	Comprehensive Performance Assessment
DCLG	Department for Communities and Local Government
DSS	Department of Social Security
FBI	Federal Bureau of Investigation
FCPAS	Forensic CPA Society
FEWG	Forensic and Expert Witness Group

FSIG	Forensic Special Interest Group
GAAP	Generally Accepted Accounting Principles
GAAS	General Accepted Auditing Standards
GLA	Greater London Authority
ICAEW	Institute of Chartered Accountants in England and Wales
ICFA	Institute of Certified Forensic Accountants
ICFS	Institute of Counter Fraud Specialist
IDeA	Improvement and Development Agency
IIA	Institute of Internal Auditors
IIASB	International Auditing and Assurance Standards Board
IRS	Internal Revenue Service
ISA	International Standard on Auditing
JPAG	Joint Practitioners' Advisory Group
LAIOG	Local Authority Investigation Officers Group
LGA	Local Government Association
LGMA	Local Government Modernization Agenda
LOFIT	London Organised Fraud Investigation Team
MCA	Management Consultancies Association
NAO	National Audit Office
NAVCA	National Association of Certified Valuation Analysts
NFA	National Fraud Authority
NFI	National Fraud Initiative
NHS	National Health Services
NIE	New institutional economics
NIFA	Network of Independent of Forensic Accountants
NIS	New Institutional Sociology
NPM	New Public Management
OIE	Old institutional economics
PCAOB	Public Companies Accounting Oversight Board

PFI	Private Finance Initiative
PwC	PricewaterhouseCoopers
SAS	Statement of Auditing Standard
SFIS	Single Fraud Investigation Services
SFO	Serious Fraud Office
SIAS	Shared Internal Audit Services
SOCA	Serious Organised Crime Agency
SOLACE	Society of Local Authority Chief Executives
TCE	Transaction Cost Economics
UK	United Kingdom
US	United States
WBS	Weekly Benefit Savings
XBRL	Extensible Business Reporting Language

ABSTRACT

This study seeks to examine the extent of forensic accounting services and to investigate the determinant factors on the intention to use the services to detect and prevent fraud within English local authorities. A validated instrument was employed to survey all 353 local authorities in England of Chief Executive Officers, Directors of Finance, and internal auditors. Concepts from institutional theory, and in particular institutional isomorphism, are used as the underlying theoretical framework. The results indicate that forensic accounting services have a place in local authorities' counter-fraud work. Furthermore, both coercive and mimetic pressures were found to influence the intention to use forensic accounting services. In addition, the benefits and the costs of forensic accounting services and the strength of the in-house counter fraud resources were deemed to be associated. This study contributes to the body of knowledge of forensic accounting, fraud and management consultants and institutional theory in focusing on the utilisation of external resources to counter fraud particularly in the UK public sector. By understanding and examining the extent of forensic accounting, this study can inform the role and strategies of central government, local authorities, professional bodies, and forensic accounting providers on improving counter fraud work within local authorities. As this study used a self-administered survey, future studies could conduct interviews to explore possible explanations and interpretations to have richness of data besides include other participants from the regulators and the forensic accounting providers.

CHAPTER 1: INTRODUCTION

1.1 Introduction

This study focuses on understanding the financial management and accountability in the public sector by utilising management consulting services. Specifically, this study proposed that the intention to use forensic accounting services of English local authorities to detect and prevent fraud is subject to institutional pressures based on the New Institutional Sociology (NIS) theory. This study, therefore, develops a conceptual framework to investigate the relationships between the multiple variables derived from institutional pressures, other salient factors and the intention to use forensic accounting services among English local authorities.

This chapter provides the foundation for the research reported in this thesis. It begins with an introduction and background to the study, which outlines a brief history of the changes in the development of counter fraud in local authorities, and how the application of forensic accounting could be utilised. The research motivation is focusing on the importance for this study to be undertaken. The research aims describe the objectives of this study together with research questions. Followed is the summary of research design, outlining the phase undertaken and research contribution. Finally, the structure of the thesis is presented.

1.2 Background to the Study

The setting of the UK public sector has changed dramatically since the implementation of the New Public Management (NPM) (Hood, 1991, 1995, Lapsley & Oldfield, 2001). The NPM proponents can be seen as intent on making fundamental changes to management structures,

processes and practices on the public sector including financial management (Lapsley & Pallot, 2000, p. 215). Public financial management refers to the '*system by which financial management resources are planned, directed and controlled to enable and influence the efficient and effective delivery of public service goals*' (CIPFA 2010a, p.3). One of the key elements in the financial management reform process is the utilisation of accounting techniques previously applied in the private sector for planning and decision making in the new public sector environment (Mir & Sutiyono, 2013). The reform of local government can be seen as part of a wider set of public sector reform under the NPM (Lapsley & Oldfield, 2001).

Under the NPM, public accountability has been a central component by focusing efficiency and effective management, protecting public funds and delivering services (Fatemi & Behmanesh, 2012), and as a pre-requisite for good governance (Ferry, Eckersley, & Zakaria, 2015). Accountability can be defined as '*a relationship between an actor and a forum, in which the actor has an obligation to explain and to justify his or her conduct, the forum can pose questions and pass judgment, and the actor can be sanctioned*' (Bovens, 2007, p. 7). Responsibility for performance in the public sector is executed through a form of managerial accountability e.g. greater level of regulation and surveillance (Cooper & Pearce, 2011). As a result, there is increasing '*regulation government*' as echoed in the number of national level regulatory bodies for the public sector (Hood, James, & Scott, 2000) and privatization reform (Lapsley & Oldfield, 2001). The current research focuses on one component of the NPM principles, which is the role of management consultants (forensic accounting services) in engaging their services within English local authorities that are subject to public accountability (detect and prevent fraud), in order to manage public funds.

As a result of the public sector reform, management consultants have been described as having a significant influence for the last few decades including in the UK (Lapsley & Oldfield, 2001). Among the reasons included: the public sector lack of the relevant skills and expertise required for the transformation (privatization reforms) (Lapsley & Oldfield, 2001). Therefore, government considered that external advice from the private sector was needed (Peet, 1998 as cited in Lapsley & Oldfield, 2001). In the context of the current research, management consulting refers to *'advisory services contracted for and provided to organisations by specially trained and qualified persons who assist, in an objective and independent manner, the client organisation to identify management problems, analyse such problems, recommend solution to these problems, and, help, when requested, in the implementation of solutions'* (Greiner & Metzger (1983), as cited in Canback, 1998a, p. 4)

There was a significant growth in use of management consultants since the mid-80s, in which the term *'consultocracy'* has been used to describe the growing power of the consultants (Lapsley & Oldfield, 2001, p. 524). At the end of 1990s, the big accounting firms (Anderson Worldwide, PwC, KPMG, Deloitte and EY) became increasingly active by establishing management advisory groups to extend their core accounting practices (Canback, 1998a). For the period 2005-2006, the public sector in England spent around £2.8 billion on external consultants with central government accounting for £1.8 billion (House of Commons Committee of Public Accounts, 2007). However, it is difficult to quantify the benefits of the services engaged from management consultants in the public sector (Lapsley & Oldfield, 2001). Some of the reasons include the appropriateness, effectiveness and underlying motives to have the services from external consultants (Corcoran & Mclean, 1998). Furthermore, the use of external consultants in the public sector may be ideologically driven (Roodhooft & Abbeele, 2006). As highlighted by Corcoran & Mclean (1998): Lapsley & Oldfield (2001) and

Roodhooft & Abbeele (2006), clearly, much is still not known about the role of management consultants in the public sector. This study, therefore, contributes in addressing this gap within the context of forensic accounting services and local authorities.

1.2.1 Local Authorities in the National Context

The public sector is composed of public organisations that were traditionally controlled and owned by the Government with responsibility to provide essential utilities and services to the community (Broadbent & Guthrie, 1992). Local authorities as part of the public sector are multifunctional organisations that deliver a whole variety of different public services such as education, planning and development, social care, housing and highways (Andrews & Boyne, 2009). Local authorities are one way in which the country's governance and administration are being executed and recognised as statutory bodies under Acts of Parliament (DCLG, 2014). There are 353 local authorities across England and these are divided in some areas into county councils (the upper tier) and district councils (the lower tier). A further description is provided in Section 4.3.1.2.

The provision of the public utilities and services has been characterised by the heavy involvement of central government in either (or both) policy making and funding (Broadbent & Guthrie, 1992). In England, local authorities' total expenditure was £154 billion in 2012-13 with more than 60% received in the form of government grants (DCLG, 2014). Local authorities are collectively one of the largest employers in England, employing nearly 1.6 million full time equivalent staff for the period 2012-13 (DCLG, 2014). These statistics indicated that local authorities are an important component of the public sector in the UK and the national economy.

1.2.2 Relationships between Forensic Accounting and Fraud Detection and Prevention in Local Authorities

By definition, forensic accounting includes the use of accounting, auditing and investigative skills (Houck et al., 2006) which can be classified into two components: litigation services and investigative services (Gray & Moussalli, 2006). Under investigative services, which is the focus of this study, a forensic accountant can be seen as one who is specialist and qualified in fraud detection and prevention (Bologna & Lindquist, 1995). The terms '*specialist*' and '*qualified*' also can be found in the definition of the management consultant described in Section 1.2. A forensic accountant has both quantitative skills in researching the numbers to discover fraud and qualitative skills in examining the strength of internal control systems (Christensen, Byington & Blalock, 2005; Muthusamy, 2011).

Based on forensic accounting literature, substantial research on the supply of forensic accounting services and the promotion of forensic accounting services seems to have been through promoting the need of the appropriate skills in education (Boys, 2008; Carnes & Gierlasinski, 2001; Houck et al., 2006; Rezaee, Crumbley, & Ellmore, 2004). However, there is very little research on the application of forensic accounting services by organisation particularly in the public sector context. Forensic accounting services providers consist of large accounting firms and small firms or specialised boutique firms. The large accounting firms classified the services as part of their non-audit services. Although the supply of forensic accounting is considered to be growing, there is little on the demand for forensic services in the literature, hence the current study investigates what factors could contribute on the demand for the services.

Fraud is a diverse category of crime that encompasses the use of deception to gain some benefit and has technical definition set out in Fraud Act 2006 (HM Treasury, 2012). Fraud in local authorities takes many forms, ranging from benefit fraud to non-benefit fraud. With the total revenue expenditure budgeted at £98.4 billion in England for the year 2012/13 (DCLG, 2013b), there is a possibility that local authorities may be targeted by fraudsters. The National Fraud Authority (NFA) in 2012 indicated that local authorities' fraud is estimated at £2.2 billion. According to Button (2011), the statistic of fraud published by the related bodies merely captures the tip of the iceberg as there are possibilities that many frauds are undiscovered, hence hidden from official reports.

Fraud prevention and detection are related, but are not the same concept. In this study, prevention of fraud refers to the practices of an organisation in having policies, procedures, training and communication to avoid potential fraud risk, while detection of fraud refers to the focuses on activities and techniques that promptly recognize whether fraud has occurred or is occurring or when preventive measures have failed (The Institute of Internal Auditors (IIA), The American Institute of Certified Public Accountants (AICPA), & Association of Certified Fraud Examiners (ACFE), 2008).

The fraud investigation in English local authorities, however, had some strengths and weaknesses. Local authorities received direct and indirect support from central government both by establishing a formal inquiry committee and inspection bodies, and indirectly by setting up a national agency like the NFA. These supports gave impact on English local authorities' capacity and commitment to address fraud (Doig, 2014). However, the inspection bodies were no longer in the structure as central government decided to close their operation, including the Audit Commission recently, as discussed in Section 2.2.5 According to Button, Johnston,

Frimpong, & Smith (2007), local authorities had specially trained civilian personnel who are responsible to prevent, investigate and secure sanctions on fraudsters known as the Counter Fraud Specialist (CFS). Although the structure and the operation of the CFS varies across local authorities, in some authorities e.g. London Borough and Birmingham City Council, their work has already been recognised.

One of the weaknesses of fraud investigation in local authorities is the focus on using reactive approach to combat fraud (Audit Commission, 2013; Fraud Advisory Panel 2011 and Gee, Button, & Brooks, 2010). In some local authorities, internal auditors are responsible for fraud investigations (Levi, Burrows, Fleming, & Hopkins, 2007). The counter fraud work by the internal auditors may be at risk if the internal auditors do not have specialists' investigation knowledge, training or skills in fraud investigation (Lane, 2011). The current study chose English local authorities due to the evidence that fraud risk is increasing in local authorities based on literature in the Section 2.2.3. Therefore, the current study focuses on fraud within local authorities' context by developing a model to examine the factors that influence the decision to use forensic accounting services.

The consequences of these situations highlight the concerns on the counter fraud such as unable to detect and prevent fraud effectively. As such, the forensic accounting can be seen to have a role in the context of fraud investigation within local authorities. Forensic accounting could offer what is still missing: providing services that focus on proactive approach (e.g. fraud risks' management and digital forensic) or by giving training in order to enhance the skills and knowledge to the related staff in local authorities. Thus, this study could enhance the understanding on the role of forensic accounting in the public sector context.

1.2.3 The development of Counter Fraud in Local Authorities

The UK central government has given a high priority to eradicate the fraud problem, including fraud in local authorities. For example, in response to the Fraud Review 2006, the UK central government allocated £29 million in increasing protection against fraud to the UK economy including the establishment of the NFA (formerly known as the National Strategic Fraud Authority). The NFA introduced 'Fighting Fraud Locally' in 2012, a strategic approach to address the need for greater prevention and smarter enforcement across local authorities such as developing a new ten point counter fraud blueprint (National Fraud Authority, 2012b) with £19 million given to 51 local authorities to counter tenancy fraud (DCLG, 2011).

The early foundation on the counter fraud work in local authorities can be seen back in 1970s. Beginning with the revelation of John Poulson's massive corruption scandals in 1972, central government announced two official enquiries to be set up: Prime Minister's Committee on Local Government Rules of Conduct and the Royal Commission on Standards of Conduct in Public Life (the Salmon Commission) in 1976. Further, the Widdicombe inquiry was established in 1986, which led to the creation of the statutory role of monitoring officer in local authorities, known as Chief Financial Officer S.151 (Lawton & Macaulay, 2004). The outcome is not encouraging as *'probity or its policing are not seen as a core function and considered neither essential nor delegable'* (Doig & Skelcher, 2001, p. 91) in which not being properly operationalised

Then, in 1988, the administration of housing benefit was transferred to local authorities from the Department of Social Security (DSS). Following this, local authorities have issue in dealing with fraud as *'the transfer of responsibility for the administration and payment of housing*

benefit was not complemented with the transfer from the Benefits Agency or Department of computer resources or records for anti-fraud work, or arrangements for access to the information systems' (Doig & Coles, 1997, p. 109). The Benefit Agency is responsible for fraud investigation under the previous administration of housing benefit. This situation raised concern to central government on the lack of investigation into housing benefit fraud.

Five years later, the Audit Commission states that the risk of fraud is increased as a result of changes to the nature and operation of local authorities' services with benefits fraud become a major concern (Audit Commission, 1994). The Audit Commission encourages local authorities to participate actively in data sharing and matching, known as the National Fraud Initiative (NFI) starting in 1996 (Audit Commission, 2012b; Doig & Coles, 1997). However, the counter fraud activities in local authorities are not encouraging: not enough effort to prevent and deter fraud (Audit Commission, 1999), the focus on detection and investigation has not been developed in terms of numbers, power, and competencies, and the investigative work carried out in local authorities is not standardised, such as the scope and technique used (Doig & Coles, 1997).

In response to the high risk of fraud in housing benefit and council tax, the government created the Benefit Fraud Inspectorate (BFI) in 1997 but the government decided to close their operation in 2008 (Davis, Downe, & Martin, 2001; The Benefit Fraud Inspectorate, 2007). The late 1990s evidenced a number of high profile cases in local authorities' history including the case of Doncaster Metropolitan Council, known as '*Donnygate scandal*' (Lawton & Macaulay, 2004; The Guardian, 1999). The reputation of the council had a serious effect following the conviction of the council leaders in fraud, bribery and corruption (The Guardian, 1999).

Following this, for the period 2000 onwards, there are significant changes made by central government in counter fraud landscape that affects local authorities, including the formation of the Standards Board for England under the Local Government Act 2000 (Lawton & Macaulay, 2004), the Comprehensive Performance Assessment (CPA) by the Audit Commission in 2002 (Murphy, Greenhalgh & Jones, 2011), the Scampion report in 2000 (National Audit Office, 2003), the NFA together with the National Reporting Centre in 2008 under the Fraud Review (Button, Johnston, & Frimpong, 2008). In 2010, the government announced the abolishment of the Audit Commission, which acts as an umbrella body to local authorities. Another major change is the plan to create the Single Fraud Investigation Services (SFIS), which is focusing on benefit fraud (Home Office, 2012). As the exercise takes place, local authorities need to be prepared to focus on non-benefit fraud.

Moving into professionalism, Button et al. (2007) acknowledge the existence of around 2,000 CFS in local authorities. In terms of structure, capabilities and performance, there are variances among CFSs in local authorities, refers to '*hybrid*' policing (Button et al., 2008, 2007; Lane, 2011). However, a recent research by the Local Authority Investigation Officers Group (LAIOG) finds that the number of the CFS (manager and investigators) in local authorities is decreasing at an increased rate due to the austerity measures (LAIOG, 2012). This is an example of impact that may affect all local authorities. The reduction of CFS is contrast to the increasing of fraud cases, which could lead to the undetected of fraud cases in 79 district local authorities (Audit Commission, 2013).

1.2.4 The Role of Forensic Accounting Services to Detect and Prevent Fraud

Ashworth (1993) and Smith (2007) acknowledged the increasing demand of forensic accounting in the UK because of a growing number of fraud investigations and business disputes. This view is supported by Huber (2009) who stated that the top management of the NFA seeks assistance from forensic accountants, who have in-depth knowledge of new fraud threats in order to reduce fraud cases in the UK. The development of forensic accounting in the UK differs from the practice in the US. For instance, there is no professional body in forensic accounting except accreditation by the Institute of Chartered Accountants in England and Wales (ICAEW) unlike in the US where there is a number of professional bodies such as the Institute of Certified Forensic Accountants (ICFA) and the Association of Certified Fraud Examiners (ACFE).

In the UK, the Institute of Counter Fraud Specialist (ICFS) provides specialist qualifications in fraud known as CFS. The emergence of professionalization among fraud investigators across central and local authorities known as CFS is encouraging (Button et al., 2007). By profession, the core function of a CFS is to investigate fraud and related offences with knowledge in law (e.g. benefits law). The main difference between CFSs and traditional fraud investigators is that CFSs conduct more preventive work such as improving the development of anti-fraud culture within organisations, and focusing on using intelligence gathering and analysis (Button et al., 2008).

In order to deter fraud effectively, proactive measures could produce the best outcomes (Smith, 2005). Local government bodies, including local authorities, require strong counter-fraud cultures, and effective counter-fraud procedures (Audit Commission, 2012c). On the other

hand, Apostolou & Crumbley (2005) and Muthusamy (2011) mentioned that forensic accountants, who had expertise and specialised knowledge and skills, can perform either reactive to investigate fraud and proactive to deter fraud from occurring. The appropriate skills posed by forensic accountants could assist organisations in evaluating the internal control systems, setting up prevention systems, and investigating fraud (Ramaswamy, 2005).

Additionally, a forensic accountant has both quantitative skills in researching the numbers to discover fraud and qualitative skills in examining the strength of internal control systems (Christensen et al., 2005; Muthusamy, 2011) besides taking a more proactive and sceptical approach against fraud (Crumbley & Apostolou, 2002; Muthusamy, 2011). For example, one of the forensic accounting services firms, Grant Thornton UK, provides forensic and investigation services to local authorities such as reviewing the current counter-fraud procedures and reducing the risk of financial loss (Grant Thornton, 2010). Therefore, forensic accounting could fill the gap and potential to be used relating to the issue that local authorities need to be more proactive towards fraud.

The Audit Commission (2013) recommended local authorities focus more on non-benefit fraud including procurement, which requires a detailed examination of financial statements. Previous studies in local authorities' fraud did not specifically address the issue in detecting financial statement fraud e.g. the responsibility to detect the fraud, either the internal auditors or the external auditors. The Chartered Institute of Public Finance & Accountancy (CIPFA) that governs the internal audit practice in English local authorities through its code of practice clearly indicates that internal audit is not responsible for prevention or detection of fraud (Lane, 2011). The HM Treasury (2012) also states that *'it is not a primary role of internal audit to*

detect fraud. Internal audit's role is to provide an independent opinion on an objective assessment of the framework of governance, risk management and control' (p.7).

Generally, the same principle applied to external auditors where the role of the external auditor is to issue an opinion to the financial statement within their scope of work, and not specifically looking for fraud (Albrecht, Albrecht & Albrecht, 2008). The forensic accounting involved the examination of financial analysis in detail compared to auditing process that conducted periodic audits (Apostolou & Crumbley, 2008; Ramaswamy, 2007). Forensic accountants are distinctively positioned to be able to uncover financial deceptions with prominent skills, in-depth knowledge and ability to critically analyse the financial statements, and deep understanding of fraud schemes (Ramaswamy, 2005). In addition, data mining is a key element in forensic accounting investigations in financial statements fraud (Golden, Skousen, & Clayton, 2006). According to Wolosky (2004), forensic accountants viewed fraud from different perspectives such as sociology, criminology and legal matters, not just from accounting and auditing perspectives.

1.3 Research Motivation

Despite the rapid changes in regulatory regimes introduced by central government, *'unethical activities have not been banished from local governments' landscape'* (Lawton & Macaulay 2004 p.628). The focus of central government to counter fraud in local authorities stressed, among others, the need for emphasis on preventive work (Audit Commission, 2012d; National Fraud Authority, 2010), and to focus more on detecting and recording non-benefit fraud particularly in district local authorities (Audit Commission, 2012c). The NFA also recommends that public sector bodies, including local authorities, adopt similar practice in the private sector, e.g. a new attitude to information management and using advance data analytics to strengthen

prevention and detection initiatives (Kemp, 2010). Forensic accounting is seen capable in providing the services by incorporating their specialist skills, knowledge, experiences, and resources.

Many studies on forensic accounting were carried out in the United States (US) that emphasized on the examination of current coverage and the future role of forensic accounting education (Carnes & Gierlasinski, 2001; Curtis, 2008; Houck et al., 2006; Ibex & Grippo, 2011; Kranacher, Morris, Pearson, & Riley, 2008; Porter & Crumbley, 2012; Ramamoorti, 2008; Rezaee, 2002; Rezaee & Burton, 1997; Rezaee et al., 1992; Smith & Crumbley, 2009) and the investigation of relevant skills of forensic accountants (Bressler, 2012; Davis, Farrell, & Ogilby, 2010; Digabriele, 2008; Harris & Brown, 2000). The findings of those studies in the US found that the demand in forensic accounting is increasing due to the abilities to more effectively deter fraud. In the UK context, the counter-fraud studies mainly examined the use of internal counter-fraud specialists (e.g. Button et al. 2007; Lane 2011). However, studies on the use of external professional services were related to internal audit outsourcing (e.g. Rittenberg & Covalski, 1999; Selim, Woodward, & Allegrini, 2009; Selim & Yiannakas, 2000). To the best of the researcher knowledge, no prior research empirically examined the use of forensic accounting services within the UK public sector.

Thus, considering the gap in the knowledge, the present study could contribute to the forensic accounting literature by empirically examining the utilisation of forensic accounting services to detect and prevent fraud, particularly in the UK public sector context.

1.4 Research Aims

The main aim of this study is to examine the extent of forensic accounting services and the determinant factors on the intention to use the services to detect and prevent fraud among English local authorities. To achieve this aim, the research objectives and research questions are formulated below.

1.4.1 Research Objectives and Research Questions

Objective 1: To identify the extent of using forensic accounting services to detect and prevent fraud by English local authorities

Based on this objective, this leads to the specific research questions:

RQ1 (a): To what extent do local authorities utilise the services from forensic accounting providers?

RQ1 (b): What types of forensic accounting services are used by English local authorities?

RQ2: What types of forensic accounting services' providers are used by English local authorities?

RQ3 (a): How satisfied are local authorities with the services received from forensic accounting services providers?

RQ3 (b): What is the level of intention to continue using the forensic accounting services?

Objective 2: To examine the perceptions of English local authorities' officers towards forensic accounting

The second objective is to gather the perceptions of the respondents towards their understanding related to the core skills/essential traits of forensic accountants

RQ4: How the core skills/essential traits of forensic accountants being perceived based on the perceptions of users or potential users of forensic accounting services?

Objective 3: To investigate the factors that influence the intention to use forensic accounting services to detect and prevent fraud by English local authorities.

Based on this objective, the next research questions are raised to investigate the dominant factors (institutional, internal control, fraud perceptions, and forensic accounting perceptions) that contribute to the intention to use forensic accounting services to detect and prevent fraud by English local authorities.

RQ5: Which factors have significant influence on the intention to use forensic accounting services?

RQ6: How strongly the significance of factors influences the intention to use forensic accounting services?

1.5 Research Contributions

There are two aspects of research contributions which are theoretical perspective and practical perspective.

1.5.1 Theoretical perspective

Findings from this study are important to provide more conclusive empirical evidence on the role of the management consultants within the public sector in the case of forensic accounting services to detect and prevent fraud in English local authorities. Additionally, within the public sector financial management under the NPM, this study provides input on how local authorities respond towards protecting public funds at the time where there are spending cuts by central government to use external expertise. Finally, this study uses institutional theory as a lens and a framework through the development of a conceptual model comprising multiple variables of institutional isomorphism and other salient factors and to be tested empirically whether the proposed theoretical framework matches with the empirical data.

1.5.2 Practical perspective

As central government have a significant role in shaping the counter-fraud arrangement in local authorities and included as one of the independent variable (coercive pressures), the findings might be useful to central government bodies and related government agencies in understanding the need for local authority to be more effective to counter fraud. For example, central government could provide incentives or assist in providing the best practices or training or accreditation in the area such as digital forensic or computer forensic which some counter-fraud teams in local authorities still lack as discussed in the literature.

The forensic accounting services provider could also benefit as this study empirically examines the demand of their services together with the reasons (determinant factors). The providers could analyse their strategy to have more market in the future. Finally, this study will be beneficial to the potential user of forensic accounting services by understanding how local authorities perceive forensic accounting services in terms of types of services, satisfaction level and the reasons to use the services.

1.6 Thesis Outline

The thesis of this study comprises six chapters. The description of each chapter is presented as follows:

Chapter 1 is an introductory chapter that discusses the background of the study, research motivation, research aims, and research contributions. It outlines the potential gaps and why the current research is needed.

Chapter 2 reviews existing literature on management consultants, forensic accounting, fraud, and the institutional theory.

Chapter 3 discusses the theoretical framework, clarification and development of conceptual approach, conceptual framework and research hypothesis.

Chapter 4 explains the undertaken research method and methodology. These include the research strategies, research and questionnaire design, rules of ethics and confidentiality, pilot survey, and data collection.

Chapter 5 presents the data analyses and results of this study. Particularly, this chapter provides the empirical findings on the extent of forensic accounting services together with the determinant factors on the intention to use the services.

Chapter 6 discusses the findings, discussions, and interpretations from the outcome of the data analysis.

Chapter 7 presents the conclusions of the study. Specifically, this chapter includes contributions of the study, limitations and suggestions for future research.

1.7 Summary

The supply of forensic accounting services was evidenced in the literature. However, there is limited research on the demand of forensic accounting services especially in the public sector context. The potential of forensic accounting to counter fraud also has been highlighted in the literature. As fraud keeps increasing, including in local authorities, the utilisation of forensic accounting services is the area that is still not being investigated. Thus, more research is needed to further examine the extent of forensic accounting services to detect and prevent fraud within organisation particularly in the public sector context. The next chapter will examine the related literature on forensic accounting, fraud and organisational theory.

CHAPTER 2: LITERATURE REVIEW

This chapter presents the relevant literature review of management consultants, forensic accounting, fraud and institutional theory. The literature review begins with discussions on the overview of the management consultants, the history of forensic accounting, definition of forensic accounting, forensic accounting in the UK landscape, selected themes of forensic accounting literature, types of forensic accounting services, and forensic accounting in the private and public sector perspective. The second part consists of a definition of fraud, nature and extent in local authorities, including the impacts of fraud, counter fraud development, and the concept of fraud triangle. Finally, the utilisation of forensic accounting from the perspective of institutional theory is discussed. The focus on the New Institutional Sociology (NIS) is examined as a goal of this study is to develop a conceptual framework from an institutional perspective. Subsequently, additional factors identified in the literature will be incorporated to provide a comprehensive conceptual framework.

2.1 Forensic Accounting

This section covers a brief history of forensic accounting followed by the definition of forensic accounting. Next, it describes the size, growth and development of the market followed by the literature of forensic accounting based on the identified main theme. Finally, a brief review of forensic accounting both in the private and public sector context is presented.

2.1.1 A Brief History

The origin of forensic accounting practices cannot be traced precisely, but it was believed such practices existed a long time ago. Technically, different practices emerge as part of forensic accounting services. In ancient Egyptian times, a royal auditor is used to verify irregularities (Nurse, 2002) and a scribe acts as the '*eyes and ears*' to record Pharaohs' wealth, which is similar to the concept of detection and prevention practised nowadays (Wells, 2000). The paradigms of accounting practices in the Roman Empire were more concerned with controls rather than profits including misuse of public funds (Glaudier, 1983). Further, in the Middle Ages, the Royal Courts of Justice in England combined the fields of accounting and law to administer central government's operations (Glaudier, 1983). Thus, forensic accounting services began to include the combination of accounting and law.

The integration of accounting and law continued, where, it was a common practice to use accounting experts to give a testimony of disputes in the courtroom. In the UK, the development of accounting practices alongside legal aspects was larger. In 1824, a firm in Scotland provided various accounting services including investigating legal disputes and claims. The first official chartered accounting profession is believed to have been formed in Scotland (Crumbley et al., 2003). Thirty years later, the Edinburgh Society of Accountants applied for a royal charter, with one of the focuses to increase the relationship between accounting and law. Then, in 1856, the audit corporation was required in England (Crumbley et al., 2003).

In addition to the accounting and law combination, there was literature on the role of accountants as an expert witness that emerged in the late nineteenth century. For example, the articles on arbitration are found in 1883, fraud in 1884, investigation-type articles in 1889, and

expert witness in 1898. However, the forensic accounting phrase is believed to have been used for the first time by Maurice E. Peloubet in his article in 1946 (Crumbley et al., 2003).

In practice, the first high profile case that involved forensic accountants in the US was during the trial of a notorious gangster, Al Capone, in the 1930s. The investigating team, known as '*the silent investigators*', worked under the US Internal Revenue Service (IRS), and used their superior investigative and analytical skills to defeat Al Capone's illegal activities (Nurse, 2002). Later, in the 1940s, the Federal Bureau of Investigation (FBI) created Special Agents Accountants dealing with war accounting investigations but it was the 1960s that highlighted the role of forensic accounting to business and society. Following the collapse of a big finance firm in Canada, forensic accountants acted as expert witnesses to provide evidence in court, including preparing the complex financial documentation into understandable form (Nurse, 2002).

In the 1980s and 1990s onwards, the profession of forensic accounting became more developed in the US. This can be seen in the establishment of the ACFE in 1988, followed by the American College of Forensic Examiners International (AFFEI) in 1992, Association of Certified Fraud Specialists (ACFS), National Association of Certified Valuation Analysts (NAVCA) both in 1993, and Forensic CPA Society (FCPAS) in 2005. Higher education in the US also contributed to the development by actively offering degrees in forensic accounting (Huber, 2012). Since then, there is a significant amount of forensic accounting offered by accounting firms and specialists firms, with the Big Four accounting firms controlling around 35% of the market share in the US (Tysiac, 2012). As such, it is not possible to identify when the term 'forensic accounting' was used as common practice in the UK. However, the term that has been used in the UK (e.g., counter fraud) may be applied to the same fundamental

techniques, skills, and objectivity that had been practised by forensic accounting specifically related to fraud.

2.1.2 Forensic Accounting in the UK Landscape

So far, little is known about the practices of forensic accounting in the UK as there was little empirical study in terms of the existence, and the extent of usage. However, a number of articles in newspapers, magazines, and websites provide some information on the forensic accounting practices. In his article in *The Times*, Ashworth (1993) wrote '*Growing Demand for Forensic Accounting*'. The author states that during the 1990s, forensic accounting services became important particularly in disputes arising from mergers and acquisitions and expert witness due to the increase in litigation. A number of accounting firms e.g. Touche Ross, BDO Binder Hamlyn, KPMG Peat Marwick, and Grant Thornton have developed specific departments of forensic accounting. The types of forensic accounting services range from disputes on mergers and acquisitions, loss of profits, professional negligence, and breach of contract to fraud investigations.

The view on the use of forensic accounting services is supported by Hunt (1997) in *Management Accounting* magazine that acknowledged the existence of the largest body of trained and experienced forensic accountants in the UK government departments such as the Inland Revenue, Custom and Excise, Social Security, Ministry of Defence and the Serious Fraud Office. In addition, Barney (2006) in the *Financial Times* illustrates that KPMG rapidly increased their resources in forensic accounting services. The demand on forensic accounting services is very high as financial institutions, and telecommunications companies required advanced counter fraud techniques. The forensic accounting teams in KPMG claimed to use sophisticated software algorithms to gather data for anomalies related to false insurance claims,

forged expenses, and identity theft. Similarly, Levi et al. (2007) also highlighted that in the UK, many high value cases of criminal fraud treated as civil matters for litigation are being investigated by forensic accounting and law firms.

In the same vein, Smith (2007) a member of NIFA, states that the demand for forensic accountants is increased following the growth of the number of fraud investigations and business disputes. This indicates that fraud detection and prevention is considered big business both in the public and private sectors in the UK. For example, Huber (2009) in Accountancy Age acknowledged that the NFA sought forensic accountants with their in-depth knowledge of new fraud threats and experiences in the public and private sectors to assist government in reducing fraud. In practice, the ICAEW introduced the accreditation scheme for the forensic accountants to enable potential employers such as lawyers, the National Audit Office (NAO) and Serious Fraud Office (SFO) to choose a good forensic accountant. As such, forensic accounting is becoming a niche area for professional accounting firms and supplies of the services.

2.1.3 Defining Forensic Accounting

Thornhill (1995) stated that the discipline of forensic accounting is relatively new; that, up to now, there has been no formal definition accepted as the standard. The Webster's Dictionary defined forensic as *'pertaining to, connected with, or used in the courts of law or public discussion and debate'*. Accounting is referring to *'the process of identifying, measuring, and communicating economic information to permit informed judgements and decisions by the users of the information'* (Sterling 1967, p. 104). Accordingly, forensic in the accounting profession deals with the relation and application of financial facts to legal problems (Bologna

& Lindquist 1995, p. 42). This reflects the integration of accounting practices and law both in the civil and criminal court since long times ago.

Generally, forensic accounting services are applied in the legal system or in another adversarial context (Gray & Moussalli, 2006). Forensic accounting encompasses every branch of accounting knowledge (Heitger & Heitger, 2008), and consists of two major components: investigative services and litigation support services (Gray & Moussalli, 2006; Nunn, McGuire, Whitcomb, & Jost, 2006; Chilvers, 2000; Fleming, Pearson, & Riley, 2008). For Bologna (1994), the term *'fraud auditing, forensic accounting, litigation support, investigative accounting, and valuation analysis are often used interchangeably'* (as cited in Gray & Moussalli 2006, p. 16). Therefore, forensic accounting may cover a broader area than fraud auditing which might denote fraud auditing as a subset of forensic accounting (Smith & Crumbley, 2009).

Conversely, Crumbley et al. (2003) stressed that forensic accounting needs to be distinguished from fraud auditing. The authors further stated that a forensic accountant *'may take on fraud auditing engagements and may in fact be a fraud auditor, but he or she will also use other accounting, consulting, legal, communication, and quantitative analysis skills in broader engagements'*. On the other hand, a fraud auditor *'is an accountant, especially skilled in auditing who is generally engaged in auditing with a view toward fraud discovery, documentation, and prevention'* (p. 3). Hence, the work of a forensic accountant is considered beyond the scope of the work carried out by a forensic auditor. Table 2-1 below outlines various definitions of forensic accounting covered in the academic literature, professional bodies, and forensic accounting providers.

Table 2-1: A Comparison of Forensic Accounting Definition

Author (Year)	Definition
Academic Literature	
Bologna, Lindquist and Wells (1993) (as cited in Vanasco, 1998, p. 23)	Forensic and investigative accounting is the application of financial skills and an investigative mentality to unresolved issues conducted within the context of rules of evidence. As a discipline, it encompasses financial expertise, fraud knowledge, and a strong knowledge and understanding of business reality and the working of the legal system. Its development has been primarily achieved through on-the-job training, as well as experience with investigating officers and legal counsel.
Chilvers (2000, p. 38)	Forensic accounting is the use of investigative techniques, integrated with accounting and business skills, to develop information and opinions for evidence in court and for use by expert witness. The resulting analysis can be used in law courts as well as for the discussion, debate, ultimately, for resolving disputes. It therefore involves both the fields of litigation support and investigative accounting.
Grippio & Ibex (2003 p.4)	Forensic accounting is a science (i.e., a department of systemised knowledge) that deals with the application of accounting facts gathered through auditing methods and procedures to legal problems usually dealing with financial and valuation issues which is different from traditional auditing. Forensic accounting is the investigation of an allegation; the evidence is expected to be presented in a judicial forum. Forensic accounting integrates investigative, accounting and auditing skills.
Mohay, Anderson, Collie, De Vel, & McKemmish (2003, p. 175)	Forensic accounting seeks to bring together investigative, accounting, and technology skills in investigating accounting activities with a view to getting the truth behind the numbers.
Manning (2005, p. v)	As the science of gathering and presenting financial information in a form that will be accepted by a court of jurisprudence against perpetrators of economic crimes.
Rosen (2006, p. 257)	Not easily defined, but it is associated with gathering and evaluating financial evidence for court, or court-like, proceedings.
Gray & Moussalli (2006,p. 16)	Forensic accounting services are used in the legal system or in another adversarial context. Litigation services and investigative accounting are the two main branches of forensic accounting.
Houck et al. (2006, p. 68)	Forensic accounting is the application of accounting knowledge and investigative skills to identify and resolve legal issues. It is the science of using accounting as a tool to identify and develop proof of money flow. These tools and techniques can be invaluable for fraud and forensic accounting investigators.
Nunn et al. (2006, p. 3)	Forensic accounting consists of a broad area of financial statement investigation and litigation support. Various positions including consultants, internal auditors, bankruptcy specialists, bank examiners, and valuers of closely held businesses, as well as lawyers and

	professors, can be held by forensic accountants. Among the many services offered by forensic accountants are: litigation support, expert witness engagements, divorce business valuation, and lost earnings engagements.
Crumbley et al. (2003, p. 103)	Forensic accounting is the action of identifying, recording, settling, extracting, sorting, reporting, and verifying past financial data or other accounting activities for settling current or prospective legal disputes or using such past financial data for projecting future financial data to settle legal disputes.
Gray (2008, p. 115)	Forensic accountants are viewed as a combination of an auditor and private investigator. Knowledge and skills include investigation skills, research, law, quantitative methods, finance, auditing, accounting and law enforcement officer insights beside organisational behaviour and applied psychological knowledge and skills are essential.
Owojori & Asaolu (2009, p. 184)	Forensic accounting is the practice of utilising accounting; auditing and investigative skill to assist in legal matters and the application of a specialised body of knowledge of the evidence of economic transaction. In the wider sense, it can be said as the integration of accounting, auditing and investigative skill to obtain a particular result.
Smith & Crumbley (2009a, p. 4)	Forensic accounting integrates a variety of skills including accounting, criminology, computer forensics, litigation services and auditing investigative services.
Singh (2011, p. 4)	Forensic accounting is a discipline that deals with the relationship and application of financial facts to business problems, conducted in a legal setting. The professional skills and attributes of a forensic accountant include having sufficient knowledge of accounting, audit, fraud, information technology and law evidence besides good communication skills, an investigative mentality and critical scepticism, and an understanding of psychology and motivation.
Fitzgerald (2011, p. 12)	Forensic accounting is the science of gathering and presenting financial information, on perpetrators of economic crimes, in a form that will be accepted by a court of jurisprudence. It is considered to be the bridge that connects the world of accountancy with that of the law.
Professional Bodies	
CICA (2006, p. 2) The Canadian Institute of Chartered Accountants (CICA)	Investigative and forensic engagements are those that require the application of professional accounting skills, investigative skills, and investigative mindset and involve disputes or anticipated potential disputes, or where there are risks, concerns, or allegations of fraud or other illegal or unethical conduct.

AICPA Forensic and Valuation Services Executive Committee (2008, p. 1)	The application of special skills in accounting, auditing, finance, quantitative methods, certain areas of the law, and research, and investigative skills to collect, analyse, and evaluate evidential matter and to interpret and communicate findings and may involve either an attest or consulting services. The AICPA further classifies forensic accounting services into two main categories; litigation services, and investigative services or non-litigation services. The litigation services refer to providing assistance for actual, pending, or potential legal or regulatory proceedings before a trier of fact in connection with the resolution of disputes between parties. Litigation services generally involve as an expert witness, consulting, and other services. The investigative services or non-litigation services include all forensic services not involving actual or threatened litigation such as performing analyses or investigations, that may require the same skills as used in litigation services, but do not involve the litigation process.
ACFE, 2008 (as cited in McKittrick, 2009, p. 1)	The use of professional accounting skills in matters involving potential or actual civil or criminal litigation, including, but not limited to, generally acceptable accounting and audit principles; the determination of lost profits, income, assets, or damages; evaluation of internal controls; fraud; and any other matter involving accounting expertise in the legal system. Forensic accountants combine their accounting knowledge with investigative skills, using this unique combination in litigation support and investigative accounting settings.
(ICAEW, 2013)	Forensic accountants deal with civil, criminal and insurance matters. They use their accounting, information technology and investigation skills to help lawyers, insurance companies and other clients resolve legal and technical disputes as well divorce cases.
Forensic Accounting Providers	
KPMG (1999, p. 40)	Forensic accounting is defined as assistance in disputes which are likely to involve litigation, arbitration, expert determination, mediation or an inquiry by an appropriate regulatory authority, and investigations of suspected fraud, irregularity or impropriety which could potentially lead to civil, criminal or disciplinary proceedings. While focused primarily on accounting issues, the role of the forensic accountant may extend to more general evidence gathering, advice and document handling.
PricewaterhouseCoopers (2008, p. 40) as cited in Muthusamy (2011, p.35)	Forensic accounting is a specialised discipline that arose to deal with instances of financial misstatement, in terms of both prevention and detection and, ultimately, recovery and remedy. Forensic accounting means the investigation or analysis of accounting evidence relating to unusual transactions due to either error or fraud. Forensic accountants are generally used in two ways:

	<ul style="list-style-type: none"> • to proactively investigate the control environment to identify weaknesses and areas susceptible to fraud or loss • to investigate a specific situation to ascertain the true financial position.
NIFA (2011)	Forensic accounting is the integration of an individual accounting and auditing knowledge with investigative skills that have been gained from years of practical experience. The forensic accountant will review the instructions given by the client, usually through a solicitor, thoroughly investigate those instructions and the underlying circumstances, examine the financial information and any relevant contracts and other agreements, obtain appropriate evidence, prepare any appropriate calculations, form a conclusion and publish the whole in the form of a report suitable for presentation to the court.
Frenkels Forensics (2012)	A forensic accountant uses a combination of accounting, investigative, and legal skills to provide an accounting analysis that is suitable to the court, and will form the basis for discussion, debate, and ultimate dispute resolution. As forensic accountants, we are usually instructed to analyse, interpret, summarise and present complex financial and business related issues in a manner, which is both readily understandable and properly supported.

Academicians, professional bodies, and forensic accounting services providers might have different ways of looking at the term '*forensic accounting*'. For example, academicians viewed forensic accounting as a combination of knowledge and skills, including accounting, law, criminology, information technology, and finance. Both professional bodies and forensic accounting providers provide a broader definition with emphasis on the types of services provided e.g. involving disputes or potential disputes in claim, arbitration, expert determination, and mediation. Apart from that, the forensic accounting providers extend the definition by embedding the elements of prevention and detection. Alternatively, besides being involved in investigation process, forensic accounting could be used to proactively examine the control environment to recognise weaknesses and areas susceptible to fraud or loss. The definition of forensic accounting services used in the current research draws together the

common elements identified in the definitions mainly on the investigation services components. These elements can be identified as knowledge, skills, experiences, and services provided in Table 2-2 and Figure 2-1. In Table 2-2, the common elements of the definitions are identified.

Table 2-2: Summary of Forensic Accounting Definition

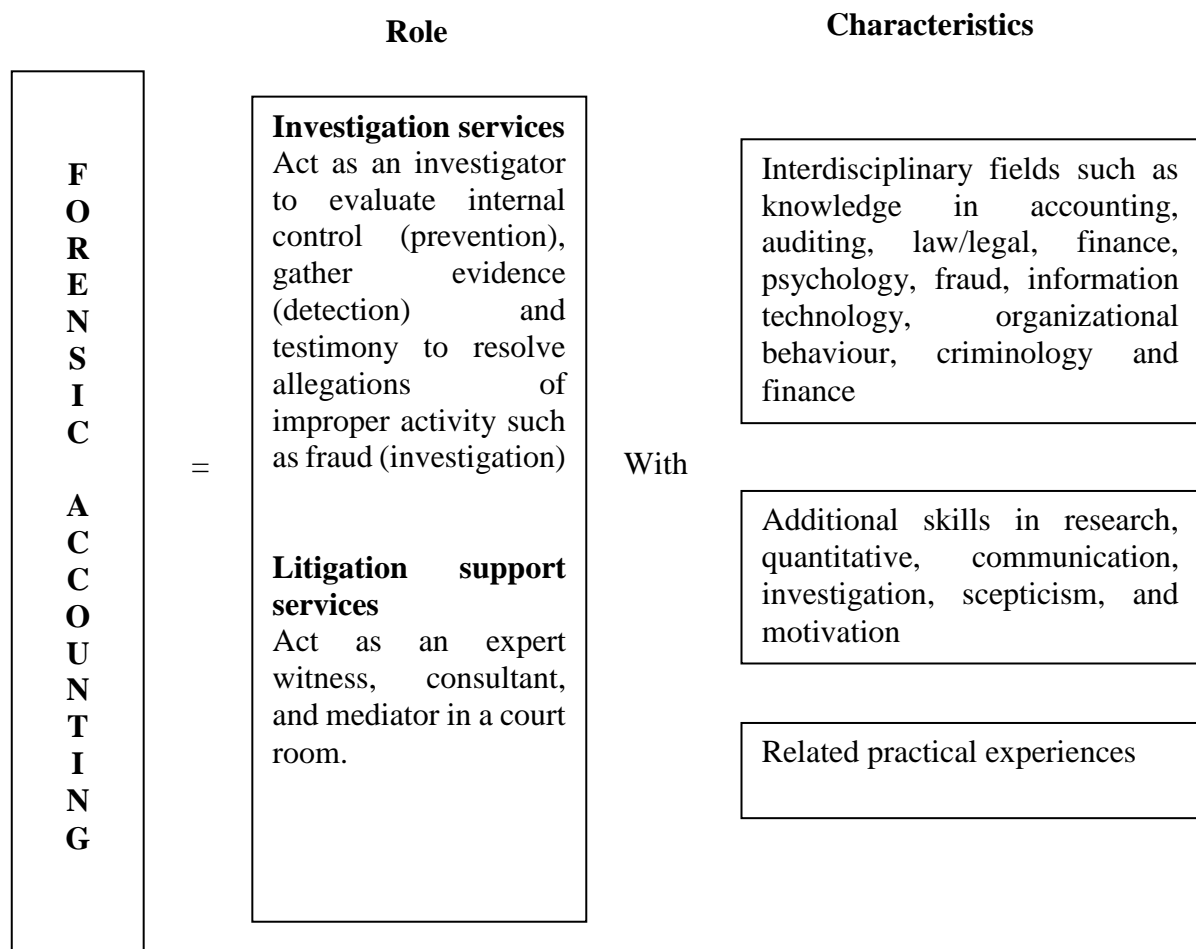
[illegible]

Definition by: Academician, professional bodies, and forensic accounting providers	Knowledge, skills, and experiences																Components		
	Accounting	Auditing	Law/legal	Business	Information technology	Investigative	Finance	Quantitative method	Psychological	Communication	Fraud	Research	Organisational behaviour	Criminology	Scepticism	Motivation	Investigative services	Litigation support services	Other services
KPMG (1999)	√	√	√			√											√	√	√
PricewaterhouseCoopers' (2008)	√	√	√								√						√	√	√
NIFA (2011)	√	√				√											√	√	√
Frenkels Forensics (2012)	√		√			√											√	√	√

While the difference between definitions can be identified as either the components of forensic accountants focused on investigative services and litigation services, the knowledge, skills, and experiences across definitions are consistent. The knowledge, skills and experiences of forensic accountants are also reflected in the literature on the forensic accounting education (see, for example; Davis et al. 2010; Rezae; Ramamoorti 2008; Rezaee et al., 2004). The definition by the leading professional bodies, namely ACFE, AICPA, and CICA, provides more detailed explanation. The ACFE, for example, differentiates between the fraud examinations and forensic accounting, and the CICA applied the term investigative and forensic engagements.

On the other hand, forensic accounting providers define forensic accounting including the types of services offered: prevention, detection, recovery and remedy (PricewaterhouseCoopers, 2008). For example, prevention of fraud involves developing a consistent system of internal control, setting up fraud prevention systems, while detection of fraud relates to investigating existing fraud (Ramaswamy, 2005). Fraud detection is *“an examination of the facts to identify the indicators of fraud sufficient to warrant recommending an investigation”* (Seetharaman, Senthilvelmurugan and Periyannayagam, 2004, p. 1064). Fraud investigation *“consists of performing extended procedures necessary to determine whether fraud, as suggested by the indicators has occurred”* (Seetharaman et. al., 2004, p. 1065). While fraud prevention involved reviewing and improving internal control, that was considered the primary defence against fraud, in which the most effective method of fraud prevention is to have a strong system of internal control (Seetharaman et. al., 2004). Proactive measures to mitigate fraud, through methods such as fraud assessment questioning (Peterson & Zikmund, 2004) and digital analysis (Bierstaker, Brody, & Pacini, 2006) were examples of prevention method that required specific skills. Thus, the elements of both detection and prevention were inter related with investigation services as shown in Figure 2.1.

Figure 2-1: Definition of Forensic Accounting



Most of the forensic accounting definition indicated the need to embrace interdisciplinary fields of accounting, auditing, law, and information technology besides additional skills in research, communication, psychological, and investigation. Figure 2.1 shows how the definition of forensic accounting is constructed.

In the UK, research on fraud (e.g. Button et al., 2007; Button, 2011; Lane, 2011) indicated the existence of the CFS in local authorities. While the work of the CFS involved some elements of forensic accounting, this study is focusing on the services provided by the external party.

Thus, for the purpose of study, a generic definition of forensic accounting services will be used:

Forensic accounting services refer to any external providers such as accounting firms, and specialised forensic accounting firms that applied special skills, investigative skills, techniques, and practical experiences in detecting and preventing fraud as part of their services to organisations.

2.1.4 Size, Growth and Development of the Market

It is found that previous forensic accounting studies focus a lot on education, specialised skills, and the role of forensic accountants (discussed in Section 2.1.5), little is known on demand of forensic accounting services – is it fictional and supply driven? Is it rebranding of other assurance services aligned to fraud to make it sound appealing e.g. fraud makes it an eye-catching service. Taking a step back and taking a broad look at the management consultants' literature, Kipping & Clark (2012) acknowledged the movement in traditional professions in accounting services that gradually loosened their previous professional obligations and moved to become a new type of organisation, known as professional service firms or business advisory firms or multi-disciplinary practices. The main difference between other services of management consultants and professional services firms is the latter focus on delivering services within the constraints of professional norms of conduct (Kipping & Kirkpatrick, 2013). Management consultants were considered as one of the most significant and enduring types of services acquired by organisations over the last 60 years (Canback, 1998a). They have been referred to as '*the shadow government in the US*' (Guttman & Willner, 1976) and the industry largely dominated by US-based firms (more than half of global market) (Saint-Martin, 2012).

The Management Consultancies Association (MCA), which acts as the representative body in the UK defined management consulting as '*the practice of creating value for organisations, through improved performance, achieved by providing objective advice and implementing business solutions*' (MCA, 2014). Organisations seek advice from external providers in order to solve problems, for which they think they lack expertise or capacity (Kipping & Clark, 2012; Lapsley & Oldfield, 2001). For instance, Lapsley & Oldfield (2001) pointed out that it is very interesting to know why management consultancy still is a booming industry particularly in the public sector. Despite the various possible reasons explained in the literature, two main reasons were; (i) lack of expertise within the organization which management consultants provide; (ii) the complexity of clients' and consultants' relationships where consultants provide reassurance at the time when the clients are insecure (Lapsley & Oldfield, 2001). A great number of consulting firms have developed worldwide to support management teams both in the private and public sector. Many of them, such as IBM, Deloitte, McKinsey, and Accenture, are in high demand with a strong presence in many countries (Engwall & Kipping, 2013). According to Greenwood, Li, Prakash, & Deephouse (2005), the Public Accounting Report outlines four services lines provided by the accounting firms; (i) audit and basic accounting services; (ii) provision of taxation advice; (iii) provision of management advisory services; (iv) other services including advice on executive compensation and outsourcing. During the 1960s, when accounting firms moved into consultancy due to low prospects for growth in audit and tax sectors, they expanded their services to non-audit based and played a major role in the professionalization and commercialization of management consulting. To put into context: in 1989, Arthur Andersen divided into two business units of Arthur Andersen and Andersen Consulting which later that year competed with each other (McDougald & Greenwood, 2012). In the UK, management consulting has historically developed as the extension of the

institutionalized relationship in which accounting firms have established with their audit clients to shape their management consulting business (Saint-Martin, 1998).

In the late 1990s, the major accounting firms dominated the management consulting market worldwide (Saint-Martin, 1998). The firms known as the Big Eight at that time included: Arthur Andersen; Coopers and Lybrand; Ernst and Whinney; Arthur Young; KPMG Peat Marwick; Deloitte, Haskins and Sells; Touche Ross; and Price Waterhouse (nowadays known as the Big Four: PricewaterhouseCoopers (PwC), EY, Deloitte and KPMG). Although all the accounting firms mentioned are now wholly American-owned, most of them were originally British and emerged during the mid-19th century when British accountants, following the trail of investment from the City, established offices in North America (Hussein and Ketz 1980, as cited in Saint-Martin, 1998). One of the major consequences of the provision of non-audit services was the increased potential conflict of interest when a firm delivered both auditing and consulting services to the same client (McDougald and Greenwood, 2012). For instance, more than 40% of management consultancy that was provided by big accounting firms in 2001 were for their own clients (Greenwood et al., 2005). According to Werr & Styhre (2002), there are two views of the consultant-client relationship as described in Table 2-3.

The argument around management consultancy centres on it being a knowledge industry, and the translation of knowledge into practice. For example, based in Table 2-3, the functionalist image point of view, consultants provide independent judgement, expertise and knowledge to competent and perceptive clients. The critical image point of view, on the other hand stated that consultants act as manipulator whereby the clients were naive and exposed in danger of being exploited (Werr & Styhre, 2002).

Table 2-3: Consultant-client Relationship

	Functionalist image: Client as buyer	Critical image: client as victim
Why use consultants?	Knowledge or resource deficiencies, independent judgment	Cognitive and socio-psychological needs emerging from the characteristics of the managerial task
Nature of the client	Competent buyer who hires and fires, critical evaluators of consulting advice	Naive, anguished victim of consultant's persuasive strategies
Nature of the consultant	Provider of a knowledge based service at the client's request	Manipulator of symbols in order to create impressions of value
Nature of the client-consultant relationship	Contractual, arm's length relationship with the client in control	Exploitive relationship with the consultant in control
Limitations to the client-consultant relationship	Consultant's superior knowledge and expertise	Dependence on repeat sales, character of inter-firm and managerial structures, client's knowledge and expertise

(Source: Werr & Styhre, 2002)

It was estimated that the public sector accounted for over 30% of the global consulting market (The Economist, 2005). The public sector in England recorded approximately £2.8 billion in 2005-06 (£2.1 billion on 2003-04) on external consultants (House of Commons Committee of Public Accounts, 2007). There is no figure available for local government, but central government spent £1.8 billion in 2005-06 on consultants to acquire core skills including project and program management and information technology. The expansion of management consultancy during the 1990s in the UK was motivated by central government that used a large scale of external consultancy during the privatization process (Deakins & Dillon, 2006). In the same view, Saint-Martin (1998) mentioned that the management consultants clearly played an important role in packaging, selling and implementing the NPM reforms to the UK public sector.

In the UK, the market of forensic accounting services should increase as the demand from organisations to counter fraud utilising the services is growing (Ashworth, 1993; Hunt, 1997; Smith, 2007). The providers of the forensic accounting services include the Big Four accounting firms (KPMG, EY, PwC and Deloitte), Grant Thornton, PKF, BDO Binder, and private investigation firms such as Kroll, and the Network of Independent of Forensic Accountants (NIFA). The types of forensic accounting services are provided for both the private and the public sector under different names or categories but mainly related to disputes resolution, claims in professional negligence or personal injury or insurance, criminal investigations, regulatory compliance monitoring such as Anti-Bribery & Corruption and Anti-Money Laundering, fraud risk management, computer forensic examination including data analytics, valuations, and fraud prevention and detection. For instance, data analytics can provide detailed insights into individual behaviour and transaction patterns that quickly identify inconsistencies which could trigger fraud (Goodwin, 2012).

According to Deakins & Dillon (2006) and Lapsley & Oldfield (2001), there remains a marked shortage of sound professional literature in the area of public sector use of professional services except studies by Corcoran & Mclean (1998); Kipping & Saint-Martin (2005); Lapsley & Oldfield (2001); McLarty & Robinson (1998); Mitchell (1995); Saint-Martin (2012). According to Kipping & Saint-Martin (2005), local authorities were among the earliest public sector in Britain that used consultancy management based on the report published by the MCA in 1996. Examples of areas covered were on '*economic studies*' concerned on feasibility studies, and better utilization of resources of manpower and materials and money. Peat Marwick, and Mitchel & Co. were the example of accounting firms that provided services such as on computer-based costing and accounting procedures (Kipping & Saint-Martin, 2005).

Mitchell (1993) used mainly secondary sources and a series of interviews in examining the appointment of planning consultants by English local authorities. The findings indicated that there was major influence by party politics (the elected councillor) and committee in the department in the decision to appoint the consultants beside strict actions in the selection process (risk-reducing strategies). For instance, the increasing use of planning consultants was due to central government being skeptical of the independence and market knowledge possessed by local authority officers and was more willing to release funds for the appointment of consultants than appoint additional officers to do work (p. 18). In a follow-up study, Mitchell (1995) conducted personal interviews and a short questionnaire on the attitudes of chief planning officers towards planning consultants in English local authorities and concluded that *'attitudes were significantly more favorable when decision makers had commissioned similar work previously, were currently using consultants, moved through the stages of the purchasing process and had been involved with consultants a number of times before'* (p. 32). The basis of his study was due to the involvement of political influence from central government, resulting in mixed attitudes towards consultants' appointments.

A survey by Deakins & Dillon (2006) in all local authorities in New Zealand on measuring performance of management consultants from both views; the clients and providers found that overall local authorities were satisfied with the performance by the consultants. However, in individual local authorities, there were significant gaps between the expectations, perceptions and what is being delivered by the consultants that would be justified by specifying more rigorous contracts and enabling specific remedial procedures to be put in place. The debate on the performance and effectiveness of management consultants not only concerned from the academic but also from central government (House of Commons Committee of Public Accounts, 2007).

There have been several high-profile value for money reviews of the government's use of management consultants e.g. published by the Efficiency Unit in 1994, the Comptroller and Auditor General (C&AG) in 2001 and Committee on Public Accounts in 2002 Report '*Better value for money from professional service*'. Generally, the recommendations made from the three reports mentioned either still unfulfilled or limited progress in implementing it. For example, the 1994 Report recognized the need to transfer skills from consultants to civil servants, the investigation on the five case study departments reviewed indicated that three had made minimal progress and the other two still '*some*' progress. Another finding based on the report by the Committee on Public Accounts in 2002 mentioned that the capability of departments to be intelligent users/clients is reduced by insufficient sharing of information on consultants' performance. As such, appropriate communication channels such as online customer forums could be developed to share information and experience (House of Commons Committee of Public Accounts, 2007).

Overall, there seems to be evidence indicating the benefits of management consultancy while to some extent the need to carefully assess and measure on the use of their services. In the public sector, for example, there is concern from the public over the use and cost of management consultants in the public sector (ACCA, 2010), which reflects the principles of public accountability and value for money. Within the scope of the current study, local authorities that had a duty to protect public funds by preventing fraud could use the professional firms; however, may have constraints in achieving effectively the objectives considering current government policy to reduce the costs of public services while continuing to improve outcomes and value for money.

A report by the NAO (2006) stressed that:

Management consultant, when used correctly and in the appropriate circumstances, can provide great benefits to clients-achieving things that clients do not have the capacity or capability to do themselves. On the other hand, when used incorrectly, management consultants can drain budgets very quickly, with little or no productive results.

(as cited in ACCA, 2010, p. 7)

The focus of this study is to investigate the use of forensic accounting services in English local authorities as an early adopter of professional services within public sector. The literature on utilising and demand for forensic accounting services broadly, however, is very limited. Despite no direct statement to classify forensic accounting services under management consultancy, the diversity of services provided particularly by larger accounting firms indicated the services could be one of the consulting services within the services provided. This study examined the website of the forensic accounting providers in the UK; the Big Four accounting firms, Grant Thornton, PKF, Kroll, and the NIFA to identify the services provided. There was evidence that local authorities are users of forensic accounting services; for example, Grant Thornton stated that their forensic and investigation services team works with local authorities to review existing counter-fraud procedures and reduce the risk of financial loss (Grant Thornton, 2012). Since a significant issue for local authorities is fraud, a focus for local authorities seems to be in relation to counter fraud to mitigate the financial loss.

Appendix 1 outlined the most common types of forensic accounting services offered by the providers. The Big Four for instance, extend the services to sub-specialisations such as corporate compliances framework related to the current regulation's requirement. Overall, the common services provided by both accounting firms and private investigation firms include fraud detection and prevention, expert witness and dispute resolution, computer forensics, and fraud risk management, which could potentially be used by local authorities.

In the UK, the market of forensic accounting services should increase as the demand from organisations to counter fraud utilising the services is growing (Ashworth, 1993; Hunt, 1997; Smith, 2007). The providers of the forensic accounting services include the Big Four accounting firms (KPMG, EY, PwC and Deloitte), Grant Thornton, PKF, BDO Binder, and private investigation firms such as Kroll, and the Network of Independent of Forensic Accountants (NIFA). The types of forensic accounting services are provided for both the private and the public sector under different names or categories but mainly related to disputes resolution, claims in professional negligence or personal injury or insurance, criminal investigations, regulatory compliance monitoring such as Anti-Bribery & Corruption and Anti-Money Laundering, fraud risk management, computer forensic examination including data analytics, valuations, and fraud prevention and detection.

The professionalism of forensic accounting in the UK differs from the practice in the US. For instance, there is no professional body in forensic accounting except accreditation by the ICAEW unlike in the US where there are a few professional bodies such as the Institute of Certified Forensic Accountants (ICFA) and the ACFE. The ICAEW introduced a Forensic Special Interest Group (FSIG), now changed to a Forensic and Expert Witness Group (FEWG), and a voluntary accreditation scheme for qualified accountants working in both areas of forensic and litigation (ICAEW, 2012a).

2.1.5 The Literature: Main Themes are Forensic Accounting Education, Specialised Skills and Technical Abilities of Forensic Accountants and the Role of Forensic Accountants

The body of literature on forensic accounting provides some information on the demand of forensic accounting services due to the need to counter fraud effectively, changes in regulations, and increase of litigation cases (e.g. Rezaee & Burton, 1997; Rezaee et al., 2004).

Generally, forensic accounting literature that has surfaced since the 1990s includes research on forensic accounting education (e.g. Rezaee et al., 1992; Rezaee et al., 2004); specialised skills and technical abilities of forensic accountants (e.g. Davis et al., 2010; Digabriele, 2008; Nunn et al., 2006; Rosen, 2006); and the role of forensic accountants (e.g. Apostolou & Crumbley, 2005; Messmer, 2004; Ramaswamy, 2005). Generally, much of the literature is conducted in the US and little has been conducted elsewhere (refer to Appendix 2). It is evident that the focus is on the supply side of forensic accounting services with little literature on its utilisation and demand.

In addition, the literature that focuses on the role of forensic accountants, including the need to have specialists' skills, indicated that forensic accountants are different from auditors (e.g. Apostolou & Crumbley, 2008; Crumbley, 2009). Despite the evident supply for forensic accounting, empirical studies on the utilisation of forensic accounting particularly in the public sector context, however, is very limited. Practically, forensic accounting services in the UK were said to be growing (Ashworth, 1993), but no empirical study has been conducted either in the private sector or public sector in the UK. Realising the gap in the literature and given the context outlined in Chapter 1, this study attempts to fill the gap by examining the utilisation of forensic accounting in English local authorities' context and determining the factors that influence the intention to use forensic accounting services.

2.1.5.1 Forensic Accounting Education

A considerable amount of literature has been conducted in the US on the adoption of forensic accounting in accounting and fraud curriculum. According to Carnes & Gierlasinski (2001) regulators and organisations expected accountants or auditors to increase their ability to understand the nature of fraud and to detect fraud. As the responsibility to prevent and detect

fraud lies with management, and statutory auditors plan their work to have a reasonable expectation by discovering material fraud, then the supply demand for forensic accounting services in detection and prevention emerges. However, it is still unclear whether the higher education provides sufficient knowledge and skills particularly in forensic accounting and fraud courses. Rezaee & Burton (1997) listed several factors why universities are not able to provide a proper forensic accounting curriculum: lack of faculty interest; lack of resources; and lack of flexibility in curriculum content. Similarly, Groomer & Heintz (1994) stressed that only 31% of universities covered fraud-related topics in internal auditing courses.

Rezaee (2002) agreed that, generally, forensic accounting education is not having proper attention in colleges and universities. Additionally, studies by Buckhoff & Schrader (2000) and Peterson & Reider (2001) reported similar findings where very few universities in the US offer courses in forensic accounting. Thus, the forensic accounting services proliferation as a service is supply-driven by professional firms. Carnes & Gierlasinski (2001) acknowledged that there is little coverage on the skills needed by auditors to understand fraud in accounting and audit courses. However, a '*Higher Education Program*' was launched by Joseph T. Wells, the chairman and founder of the ACFE in 2002 (Peterson, 2004). The objective of the program was to have at least half of the universities in the US provide courses in fraud within five years by giving free educational materials including videos, textbook, and examination. Response from the universities was encouraging as around 130 universities joined the program (Peterson, 2004).

A later study by Rezaee et al. (2004) found that forensic accounting education had increased as more universities in the US offered forensic accounting courses both at undergraduate and post-graduate level. In view of the mentioned literature, it is interesting to seek why forensic

accounting services were predominant in education literature of fraud investigation. Is that because the term forensic accounting was used as a mere appealing title or to establish and promote forensic accounting more?

2.1.5.2 Specialised Skills and Technical Abilities of Forensic Accountants

Literature has been published on the importance of specialised skills and technical abilities of forensic accountants (Cohen, Crain, & Sanders, 1996; Digabriele, 2008; Houck et al., 2006; McMullen & Sanchez, 2010; Messmer, 2004), and experience levels (e.g. Grippo & Ibex, 2003; Nunn et al., 2006). The findings of most of the studies consistently conclude deductive analysis, critical thinking, unstructured problem solving, investigative flexibility, analytical proficiency/capabilities (e.g. Davis et al., 2010; Digabriele, 2008; Messmer, 2004), independence, objectivity, strong written and verbal communication (Harris & Brown, 2000; Messmer, 2004; Rosen, 2006) as the importance skills and abilities for a forensic accountant.

However, analytical characteristics are the most important skills that forensic accountants are expected to possess (Davis et al., 2010; Digabriele, 2008; Smith & Crumbley, 2009). Davis et al. (2010) on a survey of attorney, academics, and Certified Public Accountants (CPAs) in the US find that all the three groups of respondents choose analytical traits as the most essential skills for a forensic accountant. Similarly, a study by Digabriele (2008) on 1,500 accounting academics, forensic accounting practitioners, and users of forensic accounting services reveals that analytical proficiency is among the highest ranking as the most important skill in forensic accounting besides deductive analysis. The findings of both studies are consistent with the suggestion by Messmer (2004) that analytical abilities are important in forensic accounting practice. Good analytical characteristics or skills are important as a forensic accountant needs

'to seek out all relevant information for an engagement besides be able to execute and solve the problems effectively' (Davis et al., 2010). Analytical and critical thinking suggest that the forensic accountant will have to make some intellectual leaps to pull the various pieces of evidence and the answer to the questions (who, what, where, how and why) into a compelling case (Kranacher, Riley, & Wells, 2011, p. 202).

According to Ramaswamy (2005), forensic accountants are distinctively positioned to be able to uncover financial deceptions, their prominent skills being an in-depth knowledge and the ability to critically analyse the financial statements, and a thorough understanding of fraud schemes. The author further states that the ability to comprehend the internal control systems of corporations and be able to assess their risks is also important. For Nunn et al. (2006), the most important skill of a forensic accountant is experience that can be gained through natural maturing in the profession. Additionally, technical expertise is essential for a forensic accountant, for instance, the ability to use information system and financial applications for data mining purposes (Messmer, 2004).

2.1.5.3 The Role of Forensic Accountants

Given the magnitude of the fraud problem, business failure, loss of public confidence in the credibility of financial reporting, lack of responsible corporate governance, and public dissatisfaction regarding audits that were not designed to detect fraud, these contribute to the increased emphasis on fraud investigation within the accounting profession. As a result, fraud detection specialists, including forensic accounting services, were anticipated to be in high demand (Gray & Moussalli, 2006; Kahan, 2006; Rezaee et al., 1992).

Apostolou & Crumbley (2005) highlighted the importance to understand the differences between the role of a forensic accountant and an auditor. They argued that an auditor determines compliance with auditing standards and considers the possibility of fraud compared to a forensic accountant that has a single-minded focus on the detection and deterrence of fraud. Additionally, forensic accounting normally engages '*an exhaustive, detailed effort to penetrate concealment tactics*' (Apostolou & Crumbley, 2005, p. 41). This can be illustrated briefly by looking at the costs, efforts, time, and labour required to conduct a specific forensic investigation case which significantly differs to audit a set of financial statements (Krell, 2002).

The role of the external auditor is to issue an opinion on the financial statements, and not specifically look for fraud (Albrecht et al., 2008), and therefore the auditor cannot be relied upon to detect fraud as they are not designed or executed to detect fraud (Pearson & Singleton, 2008, p. 547). Thus, the forensic accountants can be used as a tool in dealing with fraud detection and investigation due to the limitation in fraud detection by the auditor (Apostolou & Crumbley, 2005; Ramaswamy, 2005; Digabriele, 2008). The AICPA Forensic and Litigation Services Committee and Fraud Task Force (2004) stated that a forensic accountant can play a key role in bridging the gap between an audit and an investigation of fraud.

According to Ramaswamy (2005), a forensic accountant can make a significant contribution in the following areas; corporate governance, preventing fraud, creating a positive working environment, establishing effective lines of communication, vigilant oversight, establishing consequences, and fraud investigations. Newman (2009) claims that a forensic accountant with knowledge and skills in computer forensic techniques can investigate financial crimes and illegal activities including identity theft and fraud cases. A recent study by Muehlmann, Burnaby, & Howe (2012) finds that the use of forensic accountants as an expert testimony for tax litigation cases in the US has increased with 80% reported cases using the expertise from

the year 2001-2010. The study used the actual cases in court and assessed the effectiveness of forensic accountants in giving their testimony. Specifically, three types of assignments for forensic accountants used in the tax cases are fraud investigation, regulatory/governmental compliance, and commercial damage determination. Overall, the study concludes that more than half of the forensic accountants was evaluated effective by the judges (Muehlmann & Burnaby, 2012).

A survey of accountants, internal auditors, and certified fraud examiners on the perceptions toward fraud detection and prevention methods by Bierstaker et al. (2006) indicates that firewalls, virus and password protection, and internal control review are widely used to combat fraud. However, the use of forensic accountants received the highest rating of effectiveness among the fraud procedures. Based on the firm revenue analysis, it is found that the firms with revenues exceeding \$1 billion often used forensic accountants besides data mining, digital analysis, and continuous auditing. Data mining is a technique with an objective to examine large amounts of data to discover previously unknown, action oriented, hidden trends, patterns and complex relationships. Discovery, predictive modelling and deviation analysis are three major activities of data mining techniques. The authors conclude that the larger firms are more likely to invest more to combat fraud while the smaller firms may have constraints with regards to the resources (Bierstaker et al., 2006). The results confirm the views that forensic accountants are able to detect and prevent fraud more effectively (Apostolou & Crumbley, 2005; Digabriele, 2008; Ramaswamy, 2005).

Gray & Moussalli (2006) described the relationship between forensic accounting and auditing from an historical point of view. The authors categorise into four eras; classical auditing, neo-classical auditing, new era auditing, and the union of forensic accounting and auditing. During the classical auditing, Albrecht et al. (2006) indicated that in the early 20th century, auditors were expected as a matter of course to find fraud (as cited in Gray & Moussalli, 2006, p. 16). Back in 1905 and 1909, Lawrence Dicksee and Robert Montgomery state that the three objectives of an audit are detection of fraud, detection of technical errors, and detection of errors in principle, in which the fraud detection is the most important objective (DiGabriele, 2009). Conversely in 1895, an English Court ruled in the London and General Bank case that auditors are not expected to detect all fraud occurring in an audit but should conduct their audits with reasonable care (Zikmund & O'Reilly-Allen, 2007). According to Coenen (2006), the gap between the auditors that perform audits with reasonable care standard and the public that rely auditors to discover any potential fraud, remains until now.

In the second era, Gray & Moussalli (2006) mentioned that the auditing profession started to issue professional pronouncements to reduce their responsibility for fraud discovery and to avoid professional liability. For example, the term '*fraud*' is changed to '*irregularities*', which led to the concept of expectation gap. In the new era auditing (mid-20th century), there is considerable concern towards fraud detection as the fraud cases become more serious that indirectly indicated the audit failures. A well-known example of this includes the creation of the Treadway Commission, a new standard of Statement of Auditing Standard (SAS) 99 '*Consideration of Fraud in a Financial Statement Audit*', the establishment of Sarbanes-Oxley Act (2002), and the role of the Public Companies Accounting Oversight Board (PCAOB) as the regulator for auditors of public companies in the US.

According to the ICAEW (2012b) the establishment of the Bribery Act in the UK and the 2010 Dodd-Frank in the US signifies the governments' intentions to combat unethical business practices. The Bribery Act requires organisations to consider proactively and take preventive measures against fraud by setting up systems and processes within their business model. However, the whistle-blowing provision implemented within the U.S model gave more impact in practice (ICAEW, 2012b).

Finally, in the fourth era, Gray & Moussalli (2006) suggest that auditors need to equip with additional skills and knowledge of forensic accounting such as the evidence gathering and critical thinking to discover fraud. The interconnection between forensic accounting and auditing is dynamic, and has changed over time due to regulatory, social, political and standard setting processes (National Institute of Justice, 2005). However, Gray & Moussalli (2006) point out that auditors should not do a forensic audit as it may not be realistic to conduct a true forensic audit in a normal audit routine and could be expensive and time consuming.

In his analysis of the differences between forensic accounting and auditing, Gray (2008) identifies three main differences which are the role, knowledge, and skills. Auditors and forensic accountants may have similar objectives but might use different approaches. For example, the forensic accountants as a combination of auditors and private investigators have skills and knowledge in investigative, research, law, quantitative methods, finance, law, organisational behaviour, psychology. Skalak, Alas & Sellitto (2005) analyse the differences between auditing of General Accepted Auditing Standards (GAAS) and forensic accounting as described in Table 2-4.

Table 2-4: Differences between GAAS Audit and Forensic Accounting Investigation

	GAAS Audit	Forensic Accounting Investigation
Objective	Form an opinion on the overall financial statements taken as a whole	Determine the likelihood and/or magnitude of fraud occurring
Purpose	Usually required by third-party users of financial statements	Sufficient prediction that a fraud has or may have occurred
Value	Adds credibility to reported financial information	Resolves suspicions and accusations; determines the fact
Sources of evidence	Inquiry, observation, examination, and re-performance of accounting transactions to support financial statement assertions	Review detailed financial and non-financial data, search public records, conduct fact-finding as well as admission-seeking interviews, including third-party inquiries
Sufficiency of evidence	Reasonable assurance	Establish facts to support or refute suspicious or accusations

(Source: Adapted from Skalak et al., 2005)

Overall, Table 2-4 shows that audit and forensic accounting investigations are different. A forensic accountant seeks to discover the full methods and extend the investigation process on suspected or known fraud or error (Skalak et al., 2005). In addition, forensic accountants with their skills, training, education, knowledge, and experience use different procedures compared to auditors. For example, a forensic accountant takes a more proactive, sceptical approach and is not limited to GAAS in doing their job (Crumbley & Apostolou, 2002). Similarly, the UK public sector including local authorities is recommended to use proactive approach such as data analytics in countering fraud (National Fraud Authority, 2012b). Thus, forensic accounting has more advantages than financial auditing in fraud prevention and detection. In other words, the issues of audit expectation gap may be resolved by utilising the specialist investigators such as forensic accounting services.

2.1.6 Forensic Accounting in the Private Sector

Globally, forensic accounting has been a fast growing specialisation in accounting profession. D'Ath (2008) identifies several factors on the growth of forensic accounting: a complexity of accounting, increase in using new technology, changes in the current litigious environment and regulatory requirements, emergence of sophisticated commercial crime, significant number of business failures lead to *'loss of public confidence in financial statements and the audit expectation gap, globalisation, and changes in the economy, recessions'* (Muthusamy, 2011, p. 11) and cost reduction. Despite various types of forensic accounting services in the market, fraud investigation is one of the services most needed by companies (Crumbley & Apostolou, 2002; D'Ath, 2008).

Notably, all highly regulated and systems based such as insurance industry, financial services and communication industry are among the highest level of fraud compared to others (PricewaterhouseCoopers, 2009). According to Messmer (2004), forensic accounting services can determine irregularities within a company's financial records, misstatement of earnings and embezzlement. Further, forensic accounting services can assist in developing fraud prevention strategies and evaluate internal controls system (Messmer, 2004; Ramaswamy, 2005). As stressed by Apostolou & Crumbley (2005), a forensic investigation can be proactive or reactive. Thus, a good forensic accountant could effectively do their work on fraud prevention and detection.

The implementation of Sarbanes-Oxley Act in 2002 in the US increased the need for a forensic accountant on the audit team (Conway & Rouse, 2002). The author further states that the forensic accountant's overall objective is to assess the potentially fraudulent situation. A forensic accountant may also provide services to the companies such as counteractive action to

examine financial statements, and address the concerns of regulators and stock exchange. In the case of the UK, the establishment of the Bribery Act means that the UK has one of the most stringent anti-corruption in the world (Deloitte, 2011). As a result, companies in the UK need to enhance the existing policy framework by having a policy for anti-bribery and corruption. The forensic accountant may play their role by providing services on effective fraud risk assessment or internal control systems.

Based on the worldwide fraud survey, EY (2003) report that 20% of organisations, mainly in the private sector, used forensic accounting services in fraud investigations with 88% of the users satisfied with the services delivered. The report also indicates that the number is higher than previous years. The findings of the report show that organisations will continue to use fraud specialist and independent skills on complex cases such as forensic accounting services. Another report by EY (2016) based on a survey of over 2,800 senior executives in 62 countries found that 50% of the respondents are using new technologies such as forensic data analytic and specialist monitoring software to identify fraud risks. Identifying and mitigating fraud at an early stage could help an organisation to make an informed decision before an acquisition or investment is made (EY, 2016). However, to date, no empirical study examines the factors that influence the organisations to use forensic accounting services.

2.1.7 Forensic Accounting in the Public Sector

So far there has been little empirical discussion about the application of forensic accounting in the public sector. In the UK, Smith (2007) states that a large number of financial investigators are working within the Serious Organised Crime Agency (SOCA) currently merged to become the National Crime Agency, the SFO, local police forces, and the NHS. Although the author does not specifically states the term '*forensic accountants*', the financial investigators may applied some knowledge and skills in forensic accounting discipline.

Gordon Brown, the former Prime Minister says that '*What the use of fingerprints was to the 19th Century, and DNA analysis was to the 20th Century, so financial information and forensic accounting has come to be one of today's most powerful investigative and intelligence tools available in the fight against crime and terrorism*' (as cited in Smith, 2007). Similar to practice in the private sector, the use of forensic accounting services in the public sector ranges from fraud investigations to dispute in contracts. For example, one of the forensic accounting services firms, Grant Thornton UK, provides forensic and investigation services to the public sector such as reviewing the current counter-fraud procedures and reducing the risk of financial loss (Grant Thornton, 2010). The NAO rendered services from PwC to conduct a forensic audit related to contract disputes (National Audit Office, 2013).

The role of forensic accounting is indeed important within the UK public sector context as part of the public accountability. According to Huber (2009), the NFA acknowledges the role of forensic accountants to help the government in reducing fraud. The forensic accountants have in-depth knowledge of new fraud threats besides vast experience in civil recovery cases, which is valuable for the public sector to detect and prevent fraud effectively. Forensic accounting

also provides a proactive approach that can be used in the current counter fraud in the public sector, which focuses more on a reactive approach (Fraud Advisory Panel, 2011).

According to PricewaterhouseCoopers (2011), data analytics applied in forensic accounting could help to achieve significant results in a case of benefit fraud by identifying duplicate payments and unusual patterns. In 2016, EY reported that although 38% of respondents think efforts by governments and enforcement authorities to combat mismanagement including fraud have increased, 70% felt that although there was a willingness to prosecute cases, authorities are not effective in securing convictions (EY, 2016).

Therefore, forensic accounting can be used both in the private and the public sector, including local authorities, in dealing with fraud. As, to date, no study empirically investigated the use of forensic accounting services in the public sector, this study attempted to examine the utilisation of forensic accounting services within local authorities' context. Moreover, it is important to do so as it may differ to private sector but be increasingly in demand.

2.2 Fraud and Local Authorities

The purpose of this section is to describe the extent of fraud in local authorities. It begins by defining fraud and the concept of fraud triangle. Secondly, it discusses the level, types of fraud in English local authorities, followed by explaining the impact of fraud. Finally, the current and previous counter fraud work within local authorities is discussed.

2.2.1 Defining Fraud and the Fraud Triangle

In the literature, the definition of fraud varies. The Merriam-Webster Dictionary (n.d.) online dictionary defines fraud as *'deceit'* and *'trickery'*, *'the intentional perversion of truth in order to induce another to part with something of value or to surrender a legal right'*. In other words, fraud *'encompasses a wide range of behaviours that are linked by trickery or deceit with the intention it will culminate in some form of gain'* (Button, Lewis, & Tapley, 2009, p. 6). Doig & Levi (2009, p. 2) further extend the definition of fraud as *'a deceptively simple term that covers a heterogeneous set of activities, involving a very mixed set of offenders (insiders and outsiders, majority and minority ethnicities) and set of victims (powerful corporations and governments, and individuals)'*. According to CIMA (2009, p. 7), the term *'fraud'* commonly includes activities such as theft, corruption, conspiracy, embezzlement, money laundering, bribery, and extortion.

Levi & Burrows (2007, p. 299) use the term *'fraud'* to refer to *'the obtaining of financial advantage or causing of loss by implicit or explicit deception; it is the mechanism through which the fraudster gains an unlawful advantage or causes unlawful loss'*. The passage of the Fraud Act 2006 has provided a statutory definition of fraud outlining that fraud can be committed by: (1) false representations; (2) failing to disclose information; and (3) abuse of position, where in each case of fraud, the conduct of the person must be dishonest and their intention must be to make a gain, or causes loss or the risk of a loss to another (Griffith & Tegnah, 2011, p. 508).

Similar to the above definitions, the Audit Commission (2011, p. 5) defines fraud as;

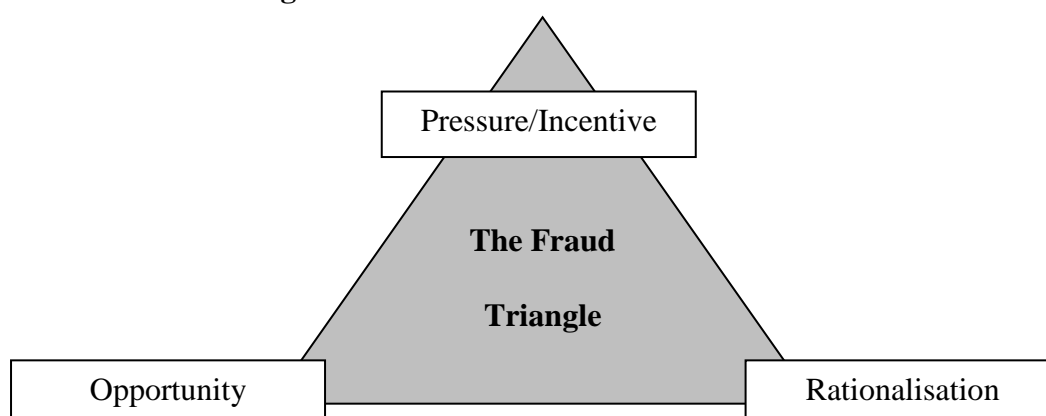
‘any intentional false representation, including failure to declare information or abuse of position which is carried out to make gain, causes loss or expose another to the risk of loss’

While a variety of definitions of the term *‘fraud’* is suggested, the present research will use the definition suggested by the Audit Commission (2011), which reflects the nature of fraud in English local authorities. The definition of fraud used in this study reflected the definition of forensic accounting services discussed in Section 2.1.3.

2.2.2 The Concept of Fraud Triangle

Much of the current understanding of why perpetrators commit fraud is grounded in the fraud triangle developed by Donald Cressey in 1953 (Dominey, Fleming, Kranacher, & Riley, 2010). The fraud triangle is a model for explaining the factors that cause someone to commit fraud. The three elements of the fraud triangle are: (1) Pressure/Incentive: (2) Opportunity: and (3) Rationalisation, as depicted in Figure 2-2.

Figure 2-2: Fraud Triangle



(Source: Adapted from Dominey et al., 2010)

2.2.2.1 Pressure/Incentive

The first element of the fraud triangle is pressure/incentives, which motivates to commit fraud in the first place. Perceived pressure can begin from either financial or non-financial need (Albrecht et al., 2008; Muthusamy, 2011, p. 26)) and unable to solve through legitimate means (ACFE, 2011). The common financial pressures on an individual include personal financial problems, gambling or drugs (Albrecht et al., 2008; Ramaswamy, 2007), and inability to pay bills (ACFE, 2011). Non-financial pressure may relate to certain behaviour such as greed, egoistic (Albrecht et al., 2008), work related pressures where an employee feels overworked and underpaid and unrecognised (Ramaswamy, 2007), and afraid of losing a job (ACFE, 2011). A fraudster may begin to consider committing an illegal act such as stealing asset or cash and falsifying a financial statement (ACFE, 2011).

A survey of over 170 senior representatives of government/state-owned enterprises from 35 countries including UK conducted by PricewaterhouseCoopers (2009) reported that 71% attributed greater risk of fraud to increased pressure/incentive. The remainder attributed to opportunity (15%) and rationalisation (12%) as the fraud risk factor. The most commonly reported factors contributing to pressure/incentive are fear of losing jobs (41%), and inability to meet targets (37%). The pressure of losing jobs arises in the situation when employees are terminated; those who remain employed are pressured where they feel that their own jobs are under threat. As a result, the likelihood of fraud being committed is higher. The survey concluded that the pressure of losing jobs is expected to increase, e.g. with austerity measures planned by central government in the UK across the public sector including in local authorities.

2.2.2.2 Opportunity

Opportunity refers to the situations or conditions that allow a person to commit a fraud. For employees, the opportunity exists when they believe they can override anti-fraud control (Apostolou & Crumbley, 2005; Muthusamy, 2011) without being detected (Dominey et al., 2010). The opportunity takes place when there are: poor internal controls, poor training, lack of prosecution of perpetrators, ineffective anti-fraud programs, policies and procedures, weak ethical culture (Dominey et al., 2010), little fear of exposure, and lower likelihood of detection (CIMA, 2009). Opportunity may also be inherent in the nature, size or structure of the organisations' operations (Golden et al., 2006). For instance, certain structure in departments of organisations may be more susceptible to misuse, and certain types of asset are more prone to misappropriation.

A report on the resilience of the UK local government to fraud by Gee, Button, & Brooks (2012) surveyed 72 local authorities using the Self-Assessment Fraud Resilience (SAFR) tool. Some findings of the report stated that local authorities still lack in: evaluating the strength of anti-fraud cultures (22%); arrangements to evaluate the extent to which a real anti-fraud and corruption culture exists (22%); using estimates of losses to make informed judgments about levels of budgetary investment in their work countering fraud and corruption (13.9%); estimating the total economic cost of fraud; regularly reviewing the effectiveness of the counter fraud work (51.4%); and formal and informal relationships in place with relevant external agencies or companies such as the police, and specialist legal firms (44%). While there are areas, e.g. established counter fraud policies, in which local authorities are considered to be doing well, certain areas as highlighted by the report (Gee et al., 2012) need to be improved. For instance, it is important for local authorities to develop relations with related bodies such

as forensic accounting services which can enhance the effectiveness of countering fraud to reduce the fraud risk.

2.2.2.3 Rationalisation

The final element of the fraud triangle is rationalisation. According to Cressey (1953), a morally acceptable rationalisation is necessary before the crime takes place (as cited in Dominey et al., 2010, p. 19). Rationalisation makes the perpetrator claim illegal behaviour as acceptable allowing their self-image as a trustworthy person. In other words, the perpetrators justify their action when committing fraud (PricewaterhouseCoopers, 2010). Similarly, CIMA (2009, p. 13) states that perpetrators may be able to rationalise their actions '*as: necessary (especially when done for business), harmless (because the victim is large enough to absorb the impact), and justified (because the victim deserved it or because the perpetrators were mistreated)*'.

A report entitled '*Global Economic Crime Survey*' by PricewaterhouseCoopers (2007a) on 5,400 organisations worldwide examine the driver of fraud based on self-rationalisations. The result indicated that the most common reasons of self-rationalisations are fraudsters' low temptation threshold (44%), apparent lack of awareness regarding the nature of their wrongdoing (40%), and denial of the financial consequences of fraudulent act (26%). In a recent survey, ACFE (2012) finds that most occupational fraudsters are first-time offenders with clean employment history. Among the three elements of fraud triangle, rationalisation is more difficult to discover but a strong ethical culture and clear values in organisations are required (CIMA, 2009).

The concept of fraud triangle is generally accepted by criminologists and fraud investigators to understand the reasons why fraud is committed within organisations (PricewaterhouseCoopers, 2007b). For example, the fraud triangle has been embedded in the professional standards of professional associations worldwide such as the International Auditing and Assurance Standards Board (IIASB) and PCAOB including the US in SAS no.99, Australia in Australian Auditing Standards (ASA) no. 240 and International Standard on Auditing (ISA) 240 (Free & Murphy, 2015). Additionally, the fraud triangle was extensively discussed in academic textbooks such as by Singleton, Bologna, & Lindquist (2006) and Albrecht, Albrecht, Albrecht & Zimbelman (2011), and, gradually in academic research (e.g. Dominey et. al. 2010; Free & Murphy, 2015; Hogan, Rezaee, Riley, & Velury, 2008; Murphy & Dacin, 2011; Skousen, Smith, & Wright, 2009).

The three elements of the fraud triangle are interactive (Albrecht et al., 2008). The authors stressed that because fraud is difficult to predict, the likelihood of a fraudulent act could be examined by evaluating the elements of pressure, opportunity and personal rationalisation. According to Dominey et al. (2010), the fraud triangle is a solid explanatory model that initiates the important elements that make '*a fraudulent act appear benign to the fraudster*' (p. 19). As a result, the fraud triangle could enhance anti-fraud professionals to understand the motivations and actions of the fraudsters. Additionally, Singleton et al. (2006) argued that the fraud triangle advocated that the most effective activities to prevent or detect fraud should be centralised on opportunity, which indicated the strengths and weakness of internal controls. According to the Fraud Advisory Panel (2011), the landscape in local authorities changed considerably a few years ago. New austerity measures introduced by central government saw a reduction of funding that led to cost-cutting measures' action in most local authorities. As a result, some local authorities had to reduce the number of staff, including critical areas such as counter fraud

(LAIOP, 2012). Thus, it could provide more opportunity for fraudsters to commit fraud because of fewer counter fraud staff as a result of austerity measures. In addition, the changes to traditional delivery mechanisms, e.g. greater reliance on third parties, could create opportunities or motivations for beneficiaries, staff and contractors to commit fraud. Thus, reducing fraud is an option for local authorities to make a real saving and protect public services (Fraud Advisory Panel, 2011).

2.2.3 Fraud: The Case of Local Authorities

Public sector bodies, including local authorities, are not immune to fraud. The NFA estimated that fraud costs the public sector in the UK around £20.6 billion a year, representing 55% of the overall national total fraud loss (National Fraud Authority, 2013). The report indicated that the huge amount of fraud loss is due to fraud against the tax benefit systems, but procurement fraud and grant fraud are increasing at a significant level. Thus, local government, including local authorities, is considered under significant threat (Cabinet Office & National Fraud Authority, 2012), with loss to fraud estimated at £2.1 billion (National Fraud Authority, 2013). In a similar pattern, a report in 2016 estimated that public sector fraud in the UK accounted for £37.5 billion (Experian, PKF Littlejohn, & Centre for Counter-Fraud Studies, 2016). For local government fraud, including local authorities, the total estimated fraud loss was £7.3 billion for non-benefits fraud and £2.370 million for benefits fraud. The details of the types and the loss to fraud in local authorities are shown in Table 2.5.

The National Fraud Authority (2013) suggested that many frauds are not detected or being prevented and there is a gap between the level of reported fraud and those pursued through the criminal justice system. In local authorities' context, the report by the Audit Commission

(2013) reveals that 124,000 cases of fraud totalling £178 million were detected in 2012/13. As expected, housing and council tax benefit accounted for more than half (£120 million), but procurement fraud is detected around £1.9 million. The latter figure suggests that local authorities should give greater attention to counter procurement fraud as it is the single largest area of financial loss to fraud, estimated at £876 million (Audit Commission, 2013).

Table 2-5: Types of fraud and loss to fraud in local authorities (2013 and 2016)

Types of fraud	2013	2016
	Amount in £Millions	Amount in £Millions
Housing tenancy	845	1,755
Procurement	876	4,131
Payroll and recruitment	154	1,108
Council tax/council tax reduction	133	60
Blue Badge Scheme abuse	46	48
Grant	35	198
Pension	7.1	79

(Source: National Fraud Authority, 2013 and Experian et al., 2016)

Note: Procurement fraud is fraud in the purchasing process, including price-fixing rings, abuse of inside information during tender application or process, and financial statement (Levi & Burrows, 2007). For 2013, council tax is under non-benefits fraud but for 2016, the estimation referred as council tax reduction under benefits fraud categories.

Table 2-5 revealed that the problem of fraud was not going away and currently fraud was on an ‘*industrial scale*’ (Experian et al., 2016). There was significant increase of housing tenancy and procurement fraud for the year 2013 and 2016 as both housing tenancy and procurement fraud represented more than 80% of the total fraud loss in local authorities. Examples of housing tenancy fraud: in a case where a woman was found guilty after producing false papers and identity to prove she was homeless in Ealing Council for more than 18 years to live in council property. The woman was prosecuted by the council’s Audit and Investigation team and will have to pay £373,280 (National Fraud Authority, 2010). The statistics indicate that local authorities not only have to focus on benefit fraud but critically require attention to counter non-benefit fraud, including procurement fraud. The current changes in counter

arrangement, e.g. the austerity measures action by central government, and the creation of the SFIS, may affect the capacity to counter non-benefit fraud (LAI OG, 2012). For example, the Audit Commission (2013, p. 5) stressed that local authorities, except in London boroughs, need more effort such as maintaining the resources and acquiring appropriate skills to counter non-benefit fraud due to impact on the SFIS.

In their latest report, the Audit Commission (2013) highlighted that there is significant variability in detected non-benefit fraud levels among local authorities. For instance, most of non-benefit fraud (76%) is detected by one quarter of local authorities, whilst 79 local authorities (particularly district councils) did not detect any single fraud. There are two possibilities in a case when no fraud is detected: a good indicator that the preventive measures are working, or a warning that capability of resources is insufficient to detect any fraud. Considering the possibility of a '*time lag*' between reducing counter fraud staff and the amount detected of fraud, the Audit Commission (2013) suggested that it is too early to identify any relationship between changes in investigative capacity and levels of detected fraud. The recommendation is that local authorities need to find ways to ensure their organisations have adequate resources to counter fraud and to review their fraud policy.

PricewaterhouseCoopers (2011) in their survey of 110 senior representatives in the UK public sector (including local authorities) indicate that the austerity measures' action in 2010 could increase risk of fraud. The findings show that the number of organisations experiencing fraud rose to 60% in the past 12 months. Interestingly, the most common type of fraud suffered is accounting fraud (68%) instead of asset misappropriation (60%) as the latter, traditionally, is the highest. Other types of fraud include bribery and corruption (19%), tax fraud (3%), and other (including benefit fraud) 29%. The report concluded that despite the increase of fraud

risk, nearly half of organisations stated that there would be no change in their fraud prevention and detection methods. In the case of local authorities, budgetary pressures, large spending cuts and difficult decisions over priorities may weaken controls and increase the likelihood of fraud.

Interestingly, the PricewaterhouseCoopers report (2011) shows that the majority of frauds in 2011 were committed by employees, compared to 2009 where external fraudsters were the most. The statistic for 2011 indicated that internal fraudsters (53%), external fraudsters (43%) committed the most serious fraud. The common types of fraud that involved employees (senior management to lower level staff) include accounting fraud, which is consistent with the findings by the National Fraud Authority (2013) on the increase of procurement fraud. Historically, the prevention of internal fraud has not been considered a priority for government but the result of the report (PricewaterhouseCoopers, 2011) suggested the risk of internal fraud cannot be ignored.

2.2.4 The Impact of Fraud on Local Authorities

Fraud can have a pervasive impact on the organisations. Specifically, fraud in local authorities not just affects the financial losses but could also impact the quality of public services (Gee et al., 2010). Additionally, Gee, Button, & Cook (2011, p. 1) stress that fraud in the public sector, including local authorities, *'often has the sort of direct, negative impact on human life that is not found elsewhere'*. For instance, tenancy fraud not only costs taxpayers £900 million a year but denies the right to the people who are eligible to receive the benefit, which can lead to social and psychological effects (CIMA, 2009). Ultimately, fraud has direct and indirect impact on:

- i. Central government: reduction of public fund, negative impact on national economy and spending power.
- ii. Local authorities: negative impact on staff morale, loss of public confidence, loss of revenue and/or ability to fund certain services of staff positions, reputational damage to council and/or elected members.
- iii. Local taxpayers: reduction and/or loss of public services.
- iv. Beneficiaries: reduction and/or loss of services, inability to access necessary services and support (financial, physical and emotional), difficulty to cover basic standard of living.

(Fraud Advisory Panel, 2011)

Generally, the costs due to fraud can be differentiated into several categories. Levi & Burrows (2007) indicate three categories of costs: direct financial/fraud costs, costs of preventing fraud before the event, and costs of responding to fraud after the event (cost of internal or outsourced private sector investigations). For example, in response to the Fraud Review 2006, the UK central government allocated £29 million in increasing protection against fraud to the UK economy including the establishment of the NFA (formerly known as the National Strategic Fraud Authority).

The NFA introduced 'Fighting Fraud Locally' in 2012, a strategic approach to address the need for greater prevention and smarter enforcement across local authorities such as developing a new ten point counter fraud blueprint (National Fraud Authority, 2012b) with £19 million given to 51 local authorities to counter tenancy fraud (DCLG, 2011). Thus, the essential funds needed such as for educational and public services purposes are diverted to fight fraud (Levi & Burrows, 2007).

Apart from that, organisations have to deal with management costs involved after the event of fraud, such as reallocation of management time and possible costs of litigation (PricewaterhouseCoopers, 2007b). Additionally, the investigation costs involved after fraud happens could be significant. In a fraud case of HealthSouth, the largest healthcare service providers in the US, Apostolou & Crumbley (2008) and Muthusamy (2011) state that the total professional fees associated to investigations is nearly \$280 million. Therefore, it is important to have effective systems in counter fraud arrangement as prevention is the most cost-effective way to deal with fraud (Adams, Campbell, Campbell, & Rose, 2006).

2.2.5 Counter Fraud in Local Authorities

According to Button (2011), there were many entities involved to fight against fraud in the UK. The police, various government departments, the SFO, specialist private investigation firms, numerous entities in private companies and local authorities play a significant role to counter fraud. In addition, numerous initiatives have emerged, ranging from high profile publicity campaigns against benefit fraud and tax evasion to the establishment of specialist bodies e.g. the CFS (Button et al., 2007). The literature on public sector fraud in the UK is outlined in Appendix 3.

However, Button et al. (2007) argued that the state of counter fraud infrastructure, or known as *'hybrid policing'* particularly in the public sector, is subject to very limited research (Doig & Coles, 1997). The term *'hybrid policing'* refers to *'those public and private bodies that are neither the public police, private security nor some form of voluntary initiative'* (Button, 2002, p. 12). According to Jones and Newburn (1998), benefit fraud investigators were the example of hybrid policing in local authorities (as cited in Button, 2002, p. 12). The antecedents of the

counter fraud, including benefit fraud, investigators in local authorities can be found in a range of initiatives by central government (Table 2-6).

Table 2-6: A Brief History of Counter Fraud Arrangements in Local Authorities

Year	Major effect
1974	Establishment of the Prime Minister's Committee on Local Government Rules of Conduct (the Redcliffe-Maud Committee) as a result of massive corruption scandals in 1972 (Doig, 1996).
1975	Establishment of the Royal Commission on Standards of Conduct in Public Life (the Salmon Commission) as a result of massive corruption scandals in 1972 (Doig, 1996).
1986	Establishment of the Widdicombe inquiry that led to the creation of the statutory role of monitoring officer in local authorities (Lawton & Macaulay, 2004).
1988	Counter fraud assist by the Benefit Agency by the DWP as a result of the administration of housing benefit transferred to local authorities (Lane, 2011)
1993	Implementation of the Weekly Benefit Savings (WBS) target as the DWP changed the arrangement to counter fraud (Audit Commission, 2014). Protecting the Public Purse Report, the first comprehensive report by the Audit Commission (Audit Commission, 1994).
1996	The Audit Commission created the NFI that led to data sharing and matching program (Bellamy & Raab, 2005).
1997	Establishment of the BFI in response to the high risk of fraud (Hood, James, & Scott, 2000).
2000	Establishment of the Standards Board for England under the Local Government Act 2000 as a corporate body (Lawton & Macaulay, 2004). Establishment of the Scampton report to co-ordinate strategic approach with Benefits Agency (Doig & Levi, 2009). Establishment of the Grabiner Report to develop partnership between the DWP and local authorities (Doig & Levi, 2009)
2008	Abolishment of the BFI and the Audit Commission took over the function (The Benefit Fraud Inspectorate, 2007). Establishment of the National Fraud Authority (Fraud Advisory Panel, 2011).
2010	Announcement to abolish the Audit Commission in 2014 (GOV.UK, 2012a). Announcement to create the SFIS in 2014 (DWP, 2011). Established a cross-Whitehall taskforce focusing on tackling fraud, error and debt in public services (National Fraud Authority, 2012b).
2012	Establishment of the 'Fighting Fraud Locally', as a strategic approach (blueprint) under the NFA (Fraud Advisory Panel, 2011).
2013	Announcement of the closure of the NFA (GOV.UK, 2013).
2014	Establishment of the National Crime Agency (GOV.UK, 2013).
2015	Abolishment of the Audit Commission and replaced by Public Sector Audit Appointments Ltd., National Audit Office, Financial Reporting Council and Cabinet Office (GOV.UK, 2015).

Source: Compiled by author

Table 2-6 indicated that central government has given a high priority to eradicate the fraud problem including fraud in local authorities. However, little is known if they have utilised forensic accounting services as part of the aim to eradicate fraud. The early foundation of counter fraud effort began when two government enquiries had been set up in a response to the revelation of massive corruption scandals of local authorities in 1972 (Doig & Coles, 1977). The counter fraud activities became a major concern as fraud was one of the major election issues during 1980s (Button et al., 2007). The authors argued that during the election campaign, instead of the commitment to reduce the number of civil servants, the central government increased the number of counter fraud staff. However, at that time, the focus to counter fraud was mainly on capacity rather than effectiveness of the investigative resources, which led to various ranges of new initiatives being implemented until today (Button et al., 2007).

Lawton & Macaulay (2004, p. 628) state that despite the rapid changes in regulatory regimes introduced by the government, *'unethical activities have not been banished from local governments' landscape*'. Some of the major concerns on the counter fraud initiatives in local authorities include the lack of professionalism, e.g. no minimum standard of training, and no standard to carry out investigations (Button et al., 2007). Following on the model of the NHS Counter Fraud Services, the professionalism of countering fraud in local authorities, emerged when the CFS qualification was introduced in 1998 (Button et al., 2007; Lane, 2011). However, in terms of structure, capabilities and performance, there are variances among CFS in local authorities (Button et al., 2008, 2007; Lane, 2011).

In the face of growing concern towards the prevalence of fraud, little has been written on the development of the counter fraud work in local authorities (Button & Brooks, 2009; Button et al., 2007; Doig, 2006; Lane, 2011). Previous research indicated the existence of investigators

in housing benefit fraud (Doig & Coles, 1997); the role of internal auditors in benefits and councils tax fraud (Levi et al., 2007); the emergence of the CFS towards professionalism to combat fraud (Button et al., 2007); and the role of specialist counter fraud teams (Lane, 2011). The mentioned studies, however, raised a number of concerns on the overall impact on the effectiveness of fraud investigations and if there is a demand for external services such as forensic accounting services.

The role of internal auditors to detect and prevent fraud has been widely discussed (e.g. Humphrey, Turley, & Moizer (1993); Burnaby, Howe, & Muehlmann (2009); Zikmund (2008); Wells (2000). Despite the discussion on the expectation gap more focus on the financial statement fraud within the private sector, a similar situation happened in the public sector. Lane (2011) stated that the CIPFA which governs, the internal audit practice in English local authorities, clearly stressed that internal audit may assist with the fraud investigation and not responsible to prevent and detect fraud. The CIPFA is a body that governs the internal audit in English local authorities through the CIPFA's code of practice.

The counter fraud work by the internal auditors may be at risk if the internal auditors do not have specialists' investigation knowledge, training or skills in fraud investigation (Lane, 2011). In general, there is not enough support for internal auditors to carry out fraud investigation and the big accountancy firms already provide forensic specialist or forensic accounting services (Button et al., 2008; Doig, 2006; DWP, 2011). On the other hand, using forensic accounting services could support the internal audit's work to be more effective in fraud investigations such as reviewing the current fraud risk management.

A survey by PricewaterhouseCoopers (2011), *'Economic crime in the public sector'*, of over 110 senior representatives from the public sector in the UK, including local authorities, indicated that informal tip offs (40%) remain to be the main means of detecting fraud in the public sector. Other methods of detecting fraud include external tip off (28%), whistle blowing (26%), internal audit (26%), and fraud risk management (18%). While it is encouraging that whistle blowing plays an important role as a formal process of fraud detection, both tip off from external and internal relies upon a series of coincidences that might not involve systematic process. The fraud risk management or assessments are essential to identify potential fraud threats and weakness in controls that create opportunities to commit fraud.

By profession, the core function of a CFS is to investigate fraud and related offences with knowledge in law (e.g. benefits law). The main difference between CFSs and traditional fraud investigators is that CFSs conduct more preventive work such as improving the development of anti-fraud culture within organisations, and focus on using intelligence gathering and analysis (Button et al., 2008). The reality is that there is resistance to the operations of CFSs in local authorities. According to Button (2011), the organisational structure of CFS teams in local authorities is subjected to regular reform and change; for instance, the closure of the BFI in 2008 and the creation of the SFIS announced in 2013. In the earlier years, a London Organised Fraud Investigation Team (LOFIT) piloted between 1996 and 1998 to counter organised fraud was disbanded (Lane, 2011). The changes in organisational structure *'can often frustrate the ability of entities to counter fraud as resources are diverted or lost in the reforms'* (Button, 2011, p. 261). This might lead to the issues of effectiveness in fraud investigation.

Unlike practice by the NHS, the local CFS is not a legal requirement in local authorities (Button et al., 2007). Therefore, there is no single standard on how the CFSs team or in-house unit is

organised in each local authority. The CFSs team in local authorities is situated in either a specialist department, section of department or as a resource in department e.g. housing benefit, audit, and council tax. The questions of adequate resources and independence of CFSs arise as their work is under jurisdiction of top management such as Chief Executive, Director of Finance, boards and councillors. To illustrate, in one local authority, there is a case where a manager of a CFS team was forced to resign due to fraud investigations involving fraud committed by a senior officer (Button, 2011). Although the case did not occur in all local authorities, the interference from management is a fundamental issue that leads the fraud investigations to be closed without further actions. The use of forensic accounting services could address the issues of resources, which act as specialist investigators and as independent investigators.

There is a limited number of empirical studies that discussed the effectiveness of counter fraud work in all English local authorities. Some studies e.g. Lane (2010, 2011) have only been carried out in a specific area, which is London local authorities. Thus, to generalise the findings to represent the overall local authorities is limited and future research is needed in other areas of local authorities (Lane, 2011). Other studies by Button et al. (2007), Lane (2011) and publications made by the related government agencies (Audit Commission, 2012c; National Fraud Authority, 2010, 2012b) indicated some of the large local authorities such as Birmingham City Council and London local authorities are excellent in counter fraud work, which sometimes are referred to as benchmarks to other local authorities. Others include: setting up a separate single unit or in-house of benefit fraud and corporate fraud, large number of resources (e.g. Birmingham City Council has around 40 staff), join resources with other local resources (e.g. Greenwich and Bromley Council), and adopting a corporate model by

having a dedicated corporate counter fraud resource with qualified investigators, highly trained and experienced in a forensic computing function (e.g. Brent Council).

2.3 Organisational Intention

The purpose of this section is to describe the principal theoretical perspective related to organisational intention in using professional services from outside such as forensic accounting services. First, an overview of the theories that are applicable in an organisation's intention studies. Then, the choice to use institutional theory is explained. Finally, the operationalization of variables of institutional theory is presented.

2.3.1 Organisational Intention to Use Forensic Accounting Services

Previous research on the organisational intention or decision to adopt in accounting studies had used theories such as Transaction Cost Economics (TCE) by Coase (1937) (e.g. Ahmed & Scapens, 2000; Balakrishnan, Eldenburg, Krishnan, & Soderstrom, 2010; Roberts & Greenwood, 1997), agency theory by Watts & Zimmerman (1983) (e.g. Adams, 1994; Caplan & Kirschenheiter, 2000; Seal, 2006), positive accounting theory by Watts & Zimmerman (1986) (e.g. Collin, Tagesson, & Andersson, 2004; Collin, Tagesson, Andersson, Cato, & Hansson, 2009; Falkman & Tagesson, 2008), contingency theory by Woodward (1958) (e.g. Collier & Woods, 2011; Geiger & Ittner, 1996), and institutional theory by DiMaggio & Powell (1983) (e.g. Ahrens & Ferry, 2016; Ashworth, Boyne, & Delbridge, 2005; Carpenter & Feroz, 2001; Henderson, Sheetz, & Trinkle, 2011; Ugrin, 2009).

At the individual level decision-making, much of the research has used theory of planned behaviour by Ajzen (1991), derived from the theory of reasoned action (Fishbein & Ajzen, 1975). For example, study on whistleblowing intentions among external auditors (Alleyne, Hudaib, & Pike, 2013), managers' perception on decision on outsourcing (Gewald, Wüllenweber, & Weitzel, 2006), and corporate managers' decision making related to fraudulent financial reporting (Carpenter & Reimers, 2005). Other studies that applied technology acceptance model by (Davis, Bagozzi, & Warshaw, 1989) included managers' adoption on Extensible Business Reporting Language (XBRL) (Felden, 2011); consumers' adoption of e-services (Featherman & Fuller, 2003), and individual differences to the acceptance of new information systems (Agarwal & Prasad, 1999). A study by Muthusamy (2011) combined the theory of reason action, theory of planned behaviour, health believe model and hierarchy of effects model on the use forensic accounting services by large companies.

One of the most important considerations in determining the appropriate theoretical framework is the locus of adoption or intention (Fichman, 1992). According to Fichman (1992), the locus of adoption refers to whether the adoption or intention decision is made at the individual level (e.g., an individual decides to use accounting software) or at the organisational level (e.g., top management decides whether to use accounting services). Although individual decision-making is also the basis of organisational intention or adoption, the determinants of individual intention or adoption differ from those of organisational intention or adoption (Khalifa & Davison, 2006).

Howlett & Migone (2013) argued that there was numerous research on the role and use of consultants in the public sector dated back in the 1970s (e.g. Kline & Buntz, 1979; Meredith & Martin, 1970) and more studies continued later (e.g. Bloomfield & Danieli, 1995; Christensen,

2005; Lapsley & Oldfield, 2001; Saint-Martin, 1998), but very few, if any, research had developed or tested theories to provide empirical evidence on the role of consultants (Lapsley & Oldfield, 2001; Mitchell, 1994). Similarly, an analysis of 33 articles from the three specialist accounting history journals up to 2009 revealed that investigations on local government mainly adopted '*a traditional conception of accounting, where the focus was on the technical aspects of accounting practices*' with a few articles adopting a theoretical framework to interpret the findings, particularly in accounting and accountability areas (Sargiacomo & Gomes, 2011, p. 268). Canback (1998b) claimed that the TCE may help to '*explain the existence of management consultant as the TCE deals with the real costs of allocating resources in an imperfect world of misunderstanding, misaligned, goals and uncertainty*' (p. 9) that aligned with the issues within management consultant environment. The increase in demand for management consulting services can be explained by fundamental shifts in the economy that are a very complex environment and require high transaction costs in order to function (Canback, 1998b). The argument by Canback (1998b), however, did not mention the applicability of the TCE in the public sector context.

On the other hand, Lapsley & Pallot (2000) proposed that '*new institutionalism*' can be used as a theoretical framework to examine the impacts of the reforms under the NPM within local authorities in Scotland. The use of management consultant is the example that impacts the public sector as a result of the NPM (Lapsley & Oldfield, 2001). The new institutionalism asserted formal organisation structures reliant on institutional rules to give legitimacy to the organisation activities, for example accounting can form an important part of the rule-making within organisations as described by Meyer and Scott (1983, p. 235, as cited in Lapsley & Pallot, 2000).

. . . accounting structures are myths . . . (which) describe the organisation as bounded and unified, as rational in technology, as well-controlled and as

attaining clear purposes. The myths are important: they help to hold the organisation together with their justifications...they legitimate the organisation with the controlling external environment.

As such, local authorities seek to incorporate externally legitimated formal structures to increase the commitment of external constituents. This would potentially adopt forensic accounting services to show they are '*doing something*' from a legitimate source in their counter fraud activities. Additionally, the reflection of isomorphism seems ideal within this context as local authorities comprise a large number of similar organisations (in terms of function, duties, legal, financing and activities); there is possibility for local government to not only reflect their external environment but to seek institutional isomorphism through mimetic process (DiMaggio & Powell, 1983). In other words, local authorities would seek legitimation by approaching other local authorities in terms of procedures, structures and external initiatives (Lapsley & Pallot, 2000). At the end, the authors concluded that the application of institutional theory may fit in the UK considering the significant and complex range of services in local authorities. In this case, forensic accounting services' providers may target sectors based on their publicised success with one provider.

The current research begins by referring to the related studies on decision-making in accounting context in both the private and public sector literature at the organisational level. A number of studies had investigated the intention, adoption or decision in accounting research by organisations (Ashworth et al., 2005; Ashworth, Boyne, & Delbridge, 2007; Blaskovich & Mintchik, 2011; Burns & Scapens, 2000; Caplan & Kirschenheiter, 2000; Carpenter & Feroz, 2001; Collier & Woods, 2011; Falkman & Tagesson, 2008; James, 2009; Johnsen, Meklin, & Oulasvirta, 2001; Johnson, 2012; Kent, 2011; Lander, Koene, & Linssen, 2013; Qian, Burritt, & Monroe, 2011; Son & Benbasat, 2007; Teo, Wei, & Benbasat, 2003; Widener & Selto, 1999; Woods, 2009). For example, a study by Widener & Selto (1999) examined the level of

outsourcing of the internal audit function based on the TCE. The authors identified that the variables of asset specificity and frequency of transactions are the major driver to outsource internal audit. However, the authors stated that the TCE does not view the external environmental, which could influence the organisational decision to outsource. This is because the TCE focuses on the efficiency or economics factors (Granovetter, 1985) and is unable to consider the influence of institutional environments (Balakrishnan et al., 2010). In contrast to the TCE, the NIS of institutional theory is mainly driven by external factors and not cost-minimising objectives (Moll, Burns, Major, & Hoque, 2006).

In another study, Ashworth et al. (2007) used institutional theory to evaluate whether organisational change in UK local authorities is consistent with institutional perspective. The finding of the study indicated that institutional pressures strongly exist in a centralised state such as the UK and on a highly structured organisation such as local authorities. For example, the three isomorphic pressures of coercive, normative, and mimetic do influence the transformation in English local authorities such as from central government, professional and other local authorities. Previously, a study by Carpenter & Feroz (2001) confirmed that institutional pressures provide better insights into understanding the decision to adopt accounting practices rather than economics variables in the public sector environment.

In the UK context, the management techniques and practices in the private sector are widely being institutionalised by the UK's public sector under the NPM reforms movement (Khadaroo, 2005). Some of the techniques and practices include Best Value, Private Finance Initiative (PFI), and Resource Accounting and Budgeting. In the case of reducing fraud in the UK public sector, the National Fraud Authority was posed by the government to identify and recommend the best practice within the private sector (National Fraud Authority, 2010).

2.3.2 Institutional Theory

Given the local authorities' context and factors in the previous section and that over the years, institutional theory has become one of the most prominent theories in organisational analysis toward understanding organisational change (Walsh, Meyer, & Schoonhoven, 2006). It has been extensively used by researchers to analyse the relationship between organisations and their environment (related to the conformity with the external environment) (Ashworth et al., 2007; Macfarlane, Barton-Sweeney, Woodard, & Greenhalgh, 2013; Oliver, 1991; Scott, 1987). Thus, based on that premise, the present study documented a frame of reference to direct the research with relevant concepts, theories and a model. Institutional theory finds its most traditional roots in the social sciences ranging from studies in ethnography, phenomenology, anthropology, political science, and organisational studies. According to DiMaggio & Powell (1991) institutional analysis is *'neither to expose the inefficiency of organisational practices nor to celebrate the non-optimality of institutional arrangements....but to develop robust explanations of the ways in which institutions incorporate historical experiences into their rules and organising logics'* (p. 33).

Institutional theory explains organisational change as driven by *'formal legitimacy'*, or the need to *'conform to expectations of key stakeholders in their environment'* (Ashworth et al., 2005). Institutional studies recognised that social values affect organisations and that organisations adopt structures for legitimisation purposes (Greenwood, Oliver, Sahlin, & Suddaby, 2008). In addition, rather than focusing on the technical elements that tend to separate and identify variation among organisations with regard to change, institutional theory emphasises on the social and cultural elements that attempt to understand the similarity and stability with regard

to organisational change (Ashworth et al., 2005). An institution is defined as a social structure consisting of a group of individuals or organisations within which collectives exercise action or orientations in a constrained environment that will continuously be changed over time (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Scott, 1987).

2.3.2.1 Variants of Institutional Theory

Moll et al. (2006) discussed the variants of institutional theory namely: (1) old institutional economics (OIE); (2) new institutional economics (NIE); and (3) new institutional sociology (NIS). The authors focussed on the three strands of institutionalism as, to date, those strands were considered to have had most influence on accounting research. According to Moll et al. (2006) the root of OIE dated back over a century, in mainly examined institutions at the society (or macro-economy) level. The fundamental of OIE conceptualized on '*why/how particular behaviors or structures emerge, sustain and/or change over time rather than merely structures exists at any given point in time*' (p. 184). Furthermore, OIE focuses the importance of power and politics, learning and innovation for shaping cumulative process over time.

NIE emerged following the concern amongst economists during the 1960s and proposed that institutions should be studied within the economics framework (Moll et al., 2006). Some notable studies in accounting research under NIE branch included (Coase, 1937; Williamson, 1981, 1998) known as TCE. The fundamental elements of NIE suggested rational-optimizing behaviour where the existence of institutions depends on the benefits over costs or cost-minimizing/efficiency concepts, for institutions to be established and maintained (Moll et al., 2006).

On the other hand, NIS significantly had been seen in sociological fields (e.g. DiMaggio & Powell, 1991; Scott, 2005) that integrated institutional approaches within organisational studies (Moll et al., 2006). A key principle of NIS studies is *'an assumption that intra-organisational structures and procedures, including accounting, are largely shaped by external factors rather than cost-minimising objectives'* (Moll et al., 2006, p. 186). In other words, NIS provides lens to researchers to explain the adoption in accounting systems that can be understood in terms of a need to conform to external pressures as opposed to a prevailing (rational-optimising) drive for increased internal efficiency (Carpenter & Feroz, 2001; Covalleski, Dirsmith, & Michelman, 1993; Modell, 2001). Given the differences of the variants of institutional theory, the present study focused on NIS which was deemed to be appropriate in the context of this study.

Institutional theory is multifaceted (Scott, 1987). Traditionally, there are two main streams of institutional theory; old and new or neo-institutionalism. While there are many differences between old and new institutionalism, both streams agreed that institutionalisation constrains organisational rationality, but it is the sources of the constraints on which they differ (DiMaggio & Powell, 1991). The classic or old institutionalism is a theoretical paradigm that focuses on roles, structures, process and norms of organisations; or the internal environment of the organisation. However, the new institutionalism switches the focus to the interaction of the organisation with others in the field, or the external environments (Fleck, 2007).

Old and new institutionalists *"identify different sources of constraint, with the former emphasising the vesting of interest within the organisation as a result of political trade-offs and alliances and the new stressing the relationship between stability and legitimacy and the*

power of common understandings that are seldom explicitly articulated” (DiMaggio & Powell, 1991, p. 12) as shown in Table 2-7.

Table 2-7: The Old and New Institutionalism

	Old	New
Conflict of interest	Central	Peripheral
Source of inertia	Vested interest	Legitimacy imperative
Structural emphasis	Informal structure	Symbolic role of formal structure
Organisation embedded in	Local community	Field, sector, society
Nature of embeddedness	Co-optation	Constitutive
Locus of institutionalisation	Organisation	Field or society
Organisational dynamics	Change	Persistence
Basis of critique of utilitarianism	Theory of interest aggregation	Theory of action
Evidence of critique of utilitarianism	Unanticipated consequences	Unreflective activity
Key form of cognition	Value, norms, attitudes	Classification, routines, scripts, schema
Cognitive basis of order	Commitment	Habit, practical action
Goals	Displaced	Ambiguous
Agenda	Policy relevance	Disciplinary

(Source: DiMaggio & Powell, 1991; Zucker, 1987)

In his synthesis of institutional theories of organisation, Zucker (1987) identified two distinct theoretical approaches as shown in Table 2-7. The old institutionalism views organisation as institution while the new institutionalism focuses on the environment as institution. Both the old and new institutionalism propounds a counter-intuitive conception that institutionalisation processes increase chances of survival while reducing efficiency. Institutionalised fields produce isomorphism and organisational compliance to institutionalised rules and practices

(Fleck, 2007) as indicated in Table 2-8. According to Greenwood & Suddaby (2006), institutional fields structure the identities and interactions of the agents (individuals or organisations) who operate in those fields. For the current study, the agents in the institutional fields are organisations rather than individuals.

According to DiMaggio & Powell (1983, p. 148), organisational field refers to “*those organisations that, in the aggregate, constitute a recognised area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products*”. For example, the sources of organisational practices in a field are regulation and technology (Meyer & Rowan, 1977). They further state that new organisational practices come into being by superiority of technical or economic requirements of the task. Over the time when such practices gain legitimacy, others in the field imitate the practices and uncritically accept the validity and value (Fleck, 2007). Accordingly, as practices widen throughout a field, it will become isomorphic (DiMaggio & Powell, 1983). Hence, forensic accounting services may be such organisational practices.

Table 2-8: Institutional Processes of Organisations

	Organisation	Environment
Institutionalisation process	Value infusion Elaboration of socially integrating myths Elite formation, nurture and renewal	Coercion Mimetism Normatism
Institutionalisation outcomes	Non expandability Character formation: distinctive inadequacy Stability and inflexibility Sub-optimal performance	Isomorphism Inertia Sub-optimal performance

(Source: Fleck, 2007)

The institutional theory recognises cultural and institutional pressures that intervene in the widening of management practices (DiMaggio & Powell, 1983; Scott 1987, 2005). Therefore, it is useful to study how institutional pressures interact in decision-making processes within organisations like English local authorities. Changes in organisations often reflect *“myth in the institutional environment rather than the detached calculus of costs and benefits”* (Frumkin & Galaskiewicz, 2004). Organisations are bound to be institutionalised by the institutions around them (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Zucker, 1987). These institutions could be in the form of internal sources such as the organisation itself, and external pressures like central government, suppliers, and other organisations (Zucker, 1987). Pressures can be either applied formally by the institutions through written laws, regulations and standards, or informally through the intervention of norms, schemas, and routines (DiMaggio & Powell, 1983; Scott, 2005). Members of the organisation will respond to these pressures by acting in accordance with the rules that have been set out by the institutions (Meyer & Rowan, 1977; Tolbert & Zucker, 1983). For example, Ahrens & Ferry (2016) suggested that in the field of English local authorities budgeting, central government executing the budget practices through their agencies such as Her Majesty’s Treasury, the Department for Communities and Local Government (DCLG), the parliamentary Communities and Local Government Committee, the Local Government Association (LGA), and the CIPFA.

2.3.2.2 New Institutional Sociology (NIS)

NIS proposed the behaviour of organisation as motivated by forces in wider society. Organisations will seek legitimacy by adhering to rules and norms that are valued by society and, more specifically, by certain institutions in society. The mechanism through which organisations adopt similar procedures is termed institutional isomorphism. Isomorphism is ‘a

constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions' (DiMaggio & Powell, 1983, p. 149). In accounting literature, NIS perspective on institutional theory is *'primarily concerned with an organisation's interaction with the institutional environment, the effects of social expectations on the organisation, and the incorporation of these expectations as reflected in organisational practices and characteristics'* or *'a way of thinking about formal organisation structures and the nature of the historically grounded social pressures through which these structures develop'* (Dillard, Rigsby, & Goodman, 2004, p. 508). According to Mulligan (2012), the three common themes of early NIS based research were legitimacy, isomorphism, and decoupling.

Legitimacy

Legitimacy is a fundamental concept in NIS (Mulligan, 2012), which refers to *'a symbolic value to be displayed in a manner such that it is visible to outsiders'* (Scott, 2001, as cited in Mulligan, 2012). The terms *'symbol'*, *'value'*, and *'display'* indicate how an organisation is perceived by various constituents within its extent environment in order to survive and not necessarily reflect the reality (Mulligan, 2012). According to Scott (1987), the need to establish legitimacy may be greater among organisations whose processes have a degree of arbitrariness, which makes them more vulnerable to attacks on their work arrangements and procedures. Covalleski, Dirsmith, & Samuel (1996) suggested that *'an organisation's survival requires it to conform to social norms of acceptable behaviour as much as to achieve levels of production efficiency'* (p. 7).

Institutional isomorphism

The second theme within NIS literature that related to legitimacy is institutional isomorphism. Isomorphism is a process that causes one unit in a population to resemble other units in the

population that face the same set of environmental conditions (Carpenter & Feroz, 2001). According to Hannan & Freeman (1997), isomorphism arose due to the distinguishable differences in organisation environment that tend to lead to different optimal organisation structures and practices. Therefore, organisations could have similar organisational configurations in similar environments. However, the proposition by Hannan & Freeman (1997) tends to more focus on competitive isomorphism, which is mainly concerned with organisational adaptation due to competitive pressures. Contrasting with this, DiMaggio & Powell (1983) provided different views by focusing on institutional isomorphism, which considered a domain of NIS theory. Organisations which operate in similar environments are assumed to have comparable demand regarding what is generally regarded as acceptable behaviour and consequently will have a similar structure and process.

Institutional isomorphism is based on the premise that environments are collective and interconnected and it is important for organisations to respond to external demands and expectations in order to survive (DiMaggio & Powell, 1983). As a result of isomorphic pressures, organisations will become increasingly homogeneous within given domains and conform to expectations of the wider institutional environment (DiMaggio & Powell, 1983). The two types of isomorphism that were mentioned above consist of competitive and institutional. Competitive isomorphism is not the scope of the present research as it more focuses on the free and open market competition setting, and, therefore, is not applicable to analyse the public sector organisations (Carpenter & Feroz, 2001). Thus, the present research will focus on the concept of institutional isomorphism, which relates to organisational competition for political power, social fitness, and institutional legitimacy.

The institutional environments of organisations consist of a group of exogenous pressures that influence their structure and process (Carpenter & Feroz, 2001). Generally, there were three mechanisms of institutional isomorphism; coercive pressures (response to external pressure), mimetic pressures (organisations imitating other organisations), and normative pressures (stems from the professionalism of education, and professional networking) though the three mechanisms are not always empirically distinct from each other (DiMaggio & Powell, 1983). The three mechanisms of institutional isomorphism were further explained in Section 3.2.

Decoupling

Decoupling denotes the situation ‘...in which the formal organisational structures or practice is separate and distinct from actual organisational practice’ (Dillard et al., 2004, p. 509). For instance, institutionalised rules or behaviours may be adopted for ceremonial (legitimacy) reasons apart from efficiency reasons, particularly within an institutional environment dominated by market capitalism (Meyer & Rowan, 1977). Within institutional context, decoupling behaviour suggested that, under certain pressures, actual organisational behaviour can be made to differ significantly from the perceived image through legitimising actions (Lapsley & Mussari, 2008). According to Scott (2001) despite decoupling being an important element of institutional theory, this concept required more empirical investigation to determine under which circumstances decoupling is more likely to occur. In the context of this study, decoupling behaviour can only be distinguished through an investigation of the actual practices and the reported behaviour of individual organisations particularly in market capitalism environment, which is not the objective of this study. Hence, the concept of decoupling is not the central focus of this study.

2.3.2.3 Deinstitutionalisation

Two new additional concepts that appeared within the institutional theory literature were the concepts of deinstitutionalisation and reinstitutionalisation. Deinstitutionalisation is *'the erosion or discontinuity of an institutionalized organizational activity or practice'* (Oliver, 1992, p. 563), and reinstitutionalisation represents an *'exit from one institutionalization, and entry into another institutional form, organized around different principles or rules'* (Jepperson, 1991, as cited in Currie & Swanson, 2009, p. 283). Organisations, at some point, instead of conforming to and adopting the institutionalised practices, need to challenge and eliminate the established institutionalised practices (Barley & Tolbert, 1997). As suggested by Greenwood, Suddaby, & Hinings (2002) isomorphic convergence, moving from one status to another, may come from a non-isomorphic change. Similarly, the increasing parallel between organisations could originate from deinstitutionalising a current practice and reinstitutionalising a new practice. In order to deinstitutionalise, the organisation's environment needs a major shift in environment towards practices that have been widely diffused in the organisation, (e.g. long-lasting alterations in market, radical change in technologies) (Tolbert & Zucker, 1996, p. 184). The indicators of deinstitutionalisation arose when there was a significant reduction in either frequency or discontinuity in total of the established activity (Oliver, 1992).

2.4 Operationalisation of Institutional Theory

Previous research used institutional theory to study organisational change both in the private and public sector. For example, studies on the intention to adopt information system/technology in the private sector included (e.g. Henderson et al., 2011; Teo et al., 2003;

Tsamenyi, Cullen, & González, 2006; Khalifa & Davison, 2006; Yoon & George, 2013), and in the public sector (e.g. Currie, 2012; Currie & Guah, 2007; Jensen, Kjærgaard, & Svejvig, 2009; Nurdin, Stockdale, & Scheepers, 2012; Zheng, Chen, Huang, & Zhang, 2012). Specifically, previous studies also examined the influence of institutional theory in accounting domain in the private sector (e.g. Guerreiro, Rodrigues, & Craig, 2012; Hussain & Gunasekaran, 2002; Touron, 2005), and in the public sector (e.g. Greenwood & Suddaby, 2006; Hyvönen, Oulasvirta, Järvinen, & Pellinen, 2012; Johnsen et al., 2001; Van Peurse & Balme, 2010; Carpenter & Feroz, 2001; Falkman & Tagesson, 2008). A summary of some of these studies was shown in Table 2.9.

The aforementioned studies noticeably suggested the importance of institutional theory in understanding organisational behaviour, and also demonstrated the applicability in a number of disciplines. Weerakkody, Dwivedi, & Irani (2009) suggested that some of the most noteworthy studies on the understanding of adoption and diffusion in information system/technology within institutional theory included Teo et al. (2003) (electronic data/information interchange-EDI-adoption), Liang, Saraf, Hu, & Xue (2007) (Enterprise Resource Planning-ERP-adoption), Currie & Guah (2007) and Mark (2007) (on information technology-enabled process transformation). For instance, Teo et al. (2003) used institutional theory as a conceptual lense to examine the factors that influence the adoption of inter-organisational systems within companies in Singapore by empirically examining the institutional pressures (coercive, mimetic and normative) faced by Chief Executive Officers (CEO), Chief Information Officers (CIO) and Chief Financial Officers (CFO).

Similarly, Currie & Guah (2007) and Mark (2007) used institutional theory to evaluate the world's largest public sector IT programme in the UK NHS, known as National Programme of

Information Technology (NPfIT). For this purpose, Currie & Guah (2007) incorporated institutional theory to evaluate the wider organisational factors (political, social, regulatory, normative and cultural-cognitive) that influence the NPfIT programme within six UK NHS entities, while Mark (2007) followed up the Currie & Guah (2007) study by examining the appropriateness and applicability of institutional theory related to transformation of the UK NHS.

Continuing the public sector theme, the application of institutional theory also can be seen within local authorities' context (e.g. Ahrens & Ferry, 2016; Ashworth et al., 2007; Bovaird & Downe, 2006; Bowerman, 2002; Gomes, 2004; Lapsley & Pallot, 2000; Murphy, Greenhalgh, & Jones, 2011; Modell, 2012; Pouder, 1996; Reginato, Fadda, & Pavan, 2010; Seal, 1999). The study by Bowerman (2002) used concept of isomorphism to explain the initial adoption of the Business Excellence Model in English local government. A comparative study on management accounting between New Zealand and the UK local government (Scotland) conducted by Lapsley & Pallot (2000) used new institutionalist perspectives, in which there is evidence of institutional isomorphism within local authorities in Scotland compared in New Zealand. Reginato et al. (2012) combined NIS (isomorphism) and OIE (internal dynamics) to explore and analyse the reasons for accounting changes (NPM) within Italian local government. Another NPM related study by Bovaird & Downe (2006) examined the role of institutional isomorphism within English local authorities towards the Local Government Modernization Agenda (LGMA). Ahrens & Ferry (2016) adopted institutional entrepreneurship in analysing the roles of practice memory and cultural memory in institutional change of local authority budgets in England.

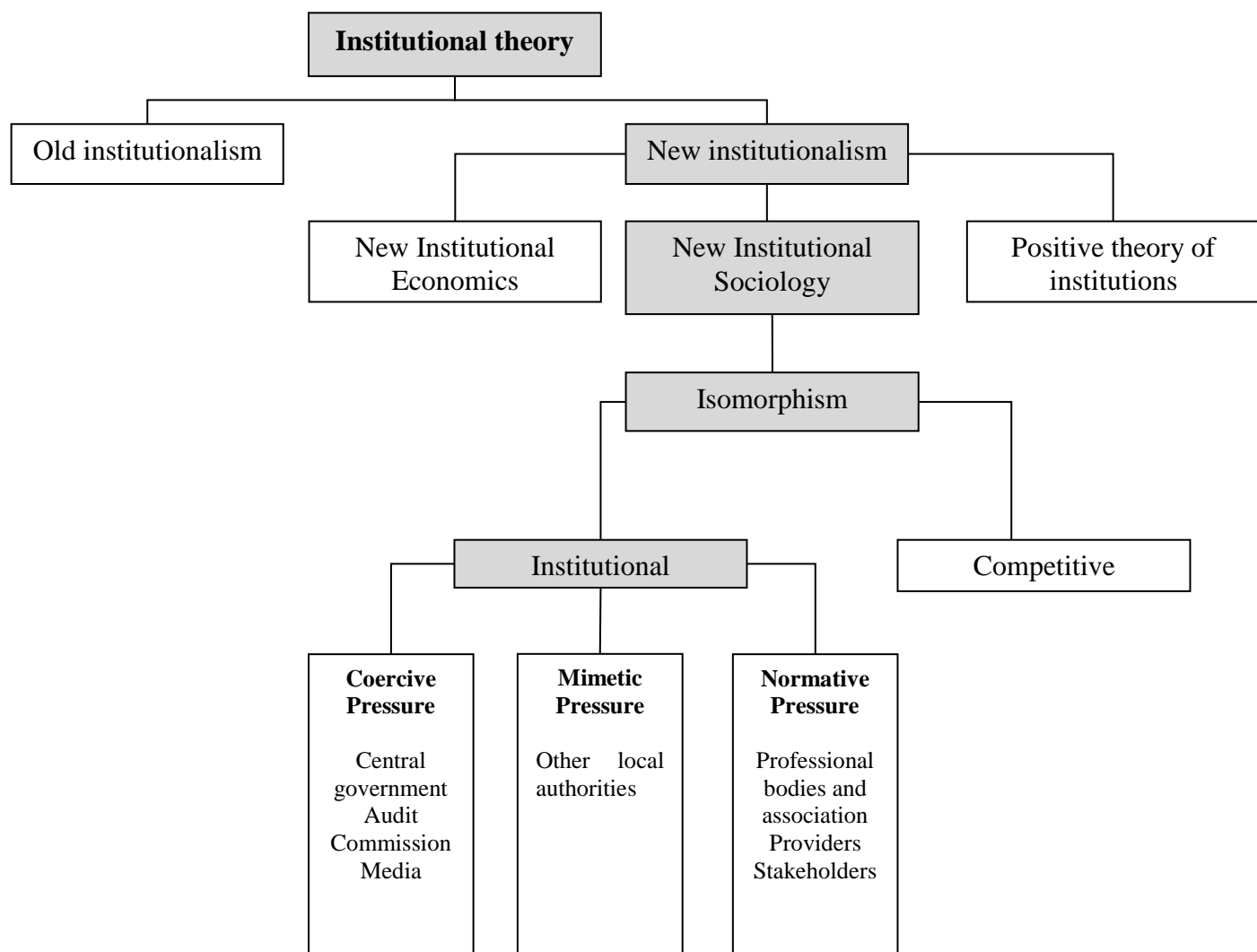
Within public sector context, institutional theory provides a good conceptual basis for studying transformational change (Weerakkody et al., 2009). This view is supported by Ashworth et al. (2007) who stated that institutional theory “*provides a useful complement to managerial and technical perspectives on organisational change in the public sector*” (p. 184). Accordingly, central government may view local authorities as a mechanism to achieve their policies rather than separate institutions that represent local citizens (Wollmann, 2000).

In this study, the organisation refers to local authorities in England. The institutional environments of local authorities included central government, the Audit Commission, media, other local authorities, professional bodies, associations, external auditors, and stakeholders as stated in Figure 2-3. An alternative to detect and prevent fraud in local authorities is by utilising forensic accounting services, which can be regarded as a new organisational practice.

The intention to use the forensic accounting services to detect and prevent fraud by local authorities may come from external pressures within their environment. Thus, the present study relies on the New Institutional Sociology (NIS) (DiMaggio & Powell, 1983, 1991) approach in order to explain and understand how the intention or decision process to use forensic accounting services by local authorities to detect and prevent fraud is shaped by the external pressures at organisational level as described in Figure 2-3. As argued by Moll et al. (2006, p. 187), researchers had used NIS insight to explain how the adoption of particular accounting systems can be understood in terms of a need to conform to external pressures as opposed to an overriding (rational-optimising) drive for increased internal efficiency. Furthermore, Ashworth et al. (2007) stated that the influences of institutional pressures are strong in a highly structured organisation such as English local authorities.

To be more comprehensive in developing the theoretical framework, the current research believes that additional salient factors from the literature can be incorporated into the conceptual framework. Guided by a conceptual framework adapted from Muthusamy (2011), the additional factors are forensic accounting perception factors (perceived benefits of forensic accounting, perceived risks of forensic accounting, transaction costs), fraud perception factors (perceived severity of fraud, perceived susceptibility of fraud), and internal control factors (audit committee, strength of internal control system). The combination of institutional theory and the additional factors are expected to provide valuable information as direct antecedents of organisational intention.

Figure 2-3: Operationalization of Institutional Theory



This study decided to use the institutional theory based on the following arguments. First, the subject of the present research which is local authorities is normally influenced by the other organisations in its environment such as central government, related government entities and professional bodies, particularly regarding the implementation of certain policies, regulations, processes and practices, which align with the principles of the institutional theory (Ashworth et al., 2007). Based on the fraud literature discussed in Section 2.2.6, indications are that central government, and other governmental bodies such as the Audit Commission, play roles in counter fraud arrangement in local authorities. In the context of this study, coercive pressures could derive from central government and other related government bodies. The role of professional bodies such as the CIPFA and the ICAEW could act as normative pressures while among local authorities could act as mimetic pressures. Further discussions were highlighted in Section 3.2.

Secondly, previous studies demonstrate that the institutional theory is appropriate to be used in the public sector context including the state and local government. For example, Carpenter & Feroz (2001) investigated the decisions to adopt generally accepted accounting principles by the state government in the US; Hyvönen et al. (2012) examined the emergence of the accounting shared service centres of local government in Finland; Falkman & Tagesson (2008) analysed the compliance with accounting standards by the local government in Sweden; Pouder (1996) explored the decision to privatise services by the local government in the US; Bowerman (2002) examined the initial adoption of the Business Excellence Model in English local government; Lapsley & Pallot (2000) analysed accounting and management organisational change within local authorities in Scotland and New Zealand; Reginato et al. (2012) combined the used of NIS and OIE to explore and analyse the reasons for accounting

changes (NPM) within Italian local government; and Ashworth et al. (2007) investigated the implementation of new statutory framework for management of local government in England.

The above-mentioned studies concluded that the coercive pressures, mimetic pressures, and normative pressures were significant factors for the organisational adoption and intention. Carpenter & Feroz (2001) reported that the federal government (coercive pressures) and professional bodies (normative pressures) influence the decision to adopt accounting principles; Ashworth et al. (2007) posited that isomorphic pressures influence the changes in organisations. Finally, the research methodology that will be applied in the present research using a survey is appropriate within the institutional theory context. For instance, previous studies that used a questionnaire and interviews included Carpenter & Feroz (2001); Teo et al., (2003) Henderson et al. (2011); Falkman & Tagesson (2008); Pouder (1996) and Ashworth et al. (2007). The salient factors on the forensic accounting perception factors, fraud perception factors, and internal control factors are based on a study by Muthusamy (2011). The development of questionnaire is discussed in Section 4.3.3.

2.4.1 Research on Organisation Intention Using Institutional Theory

This section describes the application of institutional theory in both the public and private sector.

2.4.1.1 Public sector

Carpenter & Feroz (2001) explored how institutional pressures influence the decision to adopt or resist the use of generally accepted accounting principles (GAAP) by the state government

in the US. The coercive, normative and mimetic pressures were found to be significant on both the early decision and late decision to adopt the GAAP. The authors further clarified that it is empirically difficult to distinguish the three forms of isomorphic pressures especially on how to operationalize the mimetic pressures. However, as stated by DiMaggio & Powell (1983), the three mechanisms are not always empirically distinct from each other. At the end of the study, the authors further stated that future studies may extend the institutional theory variables and incorporate a statistical model of decision-making process.

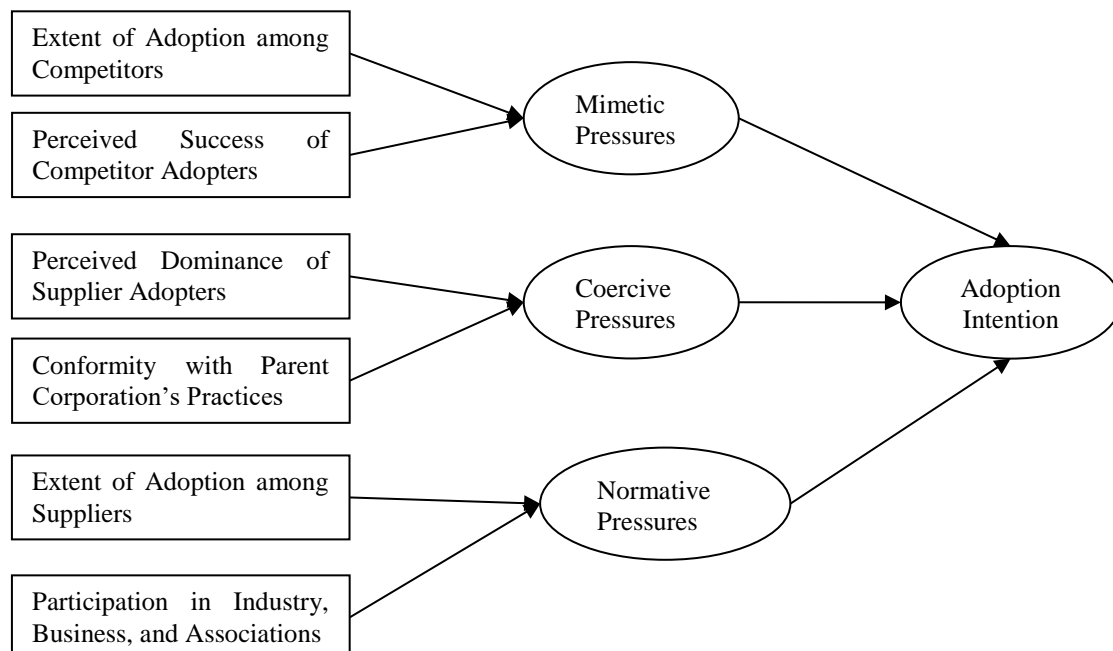
Khadaroo (2005) applied institutional theory to examine the Private Finance Initiative (PFI) accounting standard process by reviewing documents of Accounting Standard Boards (ASB) of UK. The findings indicated that all the three institutional pressures exist in the standard setting process. For example, Treasury used the coercive power to urge public sector bodies to voice their opposition towards ASB's exposure draft. The public sector bodies imitate decision making from one another, which refers to mimetic pressures. The study, however, only depends on the available information in deciding the variables beside no specific theoretical framework and empirical analysis to support the findings.

Bovaird & Downe (2006) conducted a study to examine the choice or decision in local government modernisation agenda (LGMA) in the UK. The study revealed that the institutional isomorphism tended to influence the decision and the resistance to adopt LGMA by the local government. Central government through coercive pressures influenced the process of decision to make or buy in service provision. At the same time, the mimetic pressures existed when organisations within the field of local government shared and communicated to either adopt or reject such policies and practices. The study, however which used case studies and interview approach, was not empirically supported by statistical analysis.

2.4.1.2 Private sector

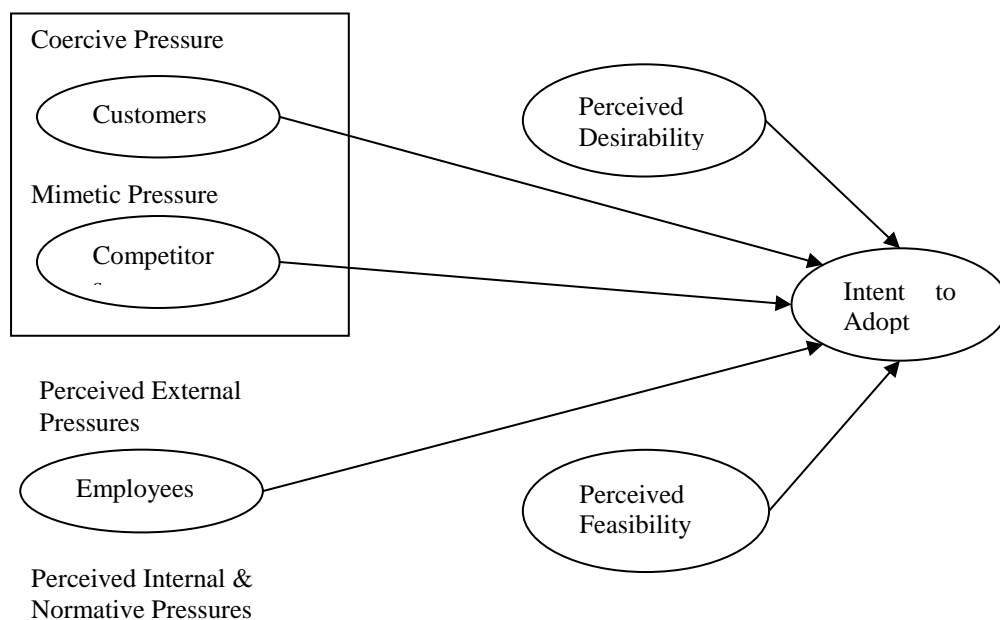
Teo et al. (2003) used institutional theory to study the adoption of inter-organisational linkages in Singapore. The results showed that institutional theory explains adoption in terms of pressures exerted on the organisation to adopt, pressures that come variously from customers, suppliers, and competitors. The normative pressures consist of extent of adoption among customers, and participation in business, industry and associations are the strongest predictors among the institutional pressures. The authors claim that their study is the first that conducted systematic tests of a fundamental linkage between institutional theory and adoption studies. The theoretical model of the study (Figure 2-4) shows the operationalization of the institutional pressures.

Figure 2-4: Theoretical Model by Teo et al. (2003)



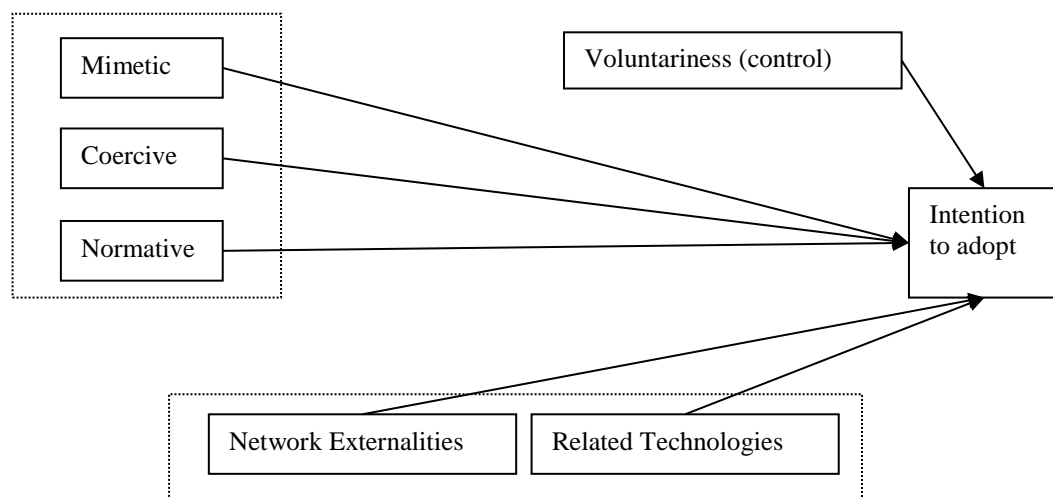
Khalifa & Davison (2006) investigated the intention to adopt electronic trading systems by the small-medium enterprise (SME) in Hong Kong. The study used a survey and semi-structured interview towards brokerages and managers. All the three institutional pressures of customers (coercive), employees (normative), and competitors (mimetic) were significant on the intention to adopt. The use of employees in their study is categorised both as internal pressures and normative pressures as shown in Figure 2.5.

Figure 2-5: Theoretical Model by Khalifa & Davison (2006)



A study by Henderson et al. (2011) investigated the influence of environmental factors on organisation's intention to adopt the XBRL in the US as depicted in Figure 2-6.. The study employed a survey to Chief Information Officer and Chief Financial Officer in 52 companies. The instrument measurement is adapted from Teo et al. (2003) and analysed using Partial Least Squares regression. The findings showed that mimetic and normative pressures were significant to the intention to use XBRL. The coercive pressure, however, is not significant due to the low adaption of XBRL by the trading partner at the time of data collection.

Figure 2-6: Theoretical Model by Henderson et al. (2011)



The selection of organisational intention studies on the institutional theory based was derived from both the public sector and private sector within the accounting and information systems context. It is found that the studies particularly in the private sector did provide a diagram of their conceptual/theoretical framework as compared to the public sector particularly in information systems disciplines. Additionally, the studies in the private sector had more advanced statistical test for data analysis. However, both studies in the private and public sector were able to distinguish the variables related to isomorphism which was very important in

guiding this study. In particular, studies from the private sector were examined as depicted in Table 2.9 due to the following reasons:

- i. similar practical focus in terms of how to operationalise institutional theory
- ii. particularly good or important paper theoretically or methodology as a foundation of this study

2.5 Summary

Like other types of organisation, it is important to counter fraud, particularly in the public sector context. The current detection and prevention method could be improved by utilising truly professional and specialist skills such as forensic accounting services. Within English local authorities' context, institutional environment plays an important role towards eradicating fraud problems. Thus, the application of institutional theory could provide an understanding on the organisational change towards using external forensic accounting services. In order to investigate the factors that contribute to the intention to use forensic accounting services, the current research attempts to develop a comprehensive theoretical framework which will be discussed in Chapter 3. The next chapter will describe the development of hypotheses and identify the individual constructs in the proposed conceptual framework.

Table 2-9: Selected Institutional Theory Studies

No	Authors/Title/Publication/ Country/Sector	Objectives of the Study and the Related Variables	Methodology			Analysis Techniques	Result	Comments / Gaps
			Res. design	Sample	Instrument			
1	Lawrence (1999) Institutional strategy Canada Private sector	Objectives: To describe patterns of organizational action directed toward managing the institutional structures Variables: IV -Coercive pressures: Customers, Normative pressures: Employees, Mimetic pressures: Competitors Others: Feasibility and desirability DV: The intention to adopt electronic trading systems (ETS)	Semi-structured interview	22 practitioners in forensic accounting industry	Chewos, Benbasat and Dexter (2001), Shapero and Sokol (1982) Using a 7 point Likert scale	Quantitative NUD*IST	Coercive, normative and mimetic pressures are significant	Future studies could distinguish between internal normative pressures and external normative pressures Future studies could enhance by examining the benefits of adoption
2	Carpenter & Feroz (2001) Institutional theory and accounting rule choice: an analysis of four US state governments' decisions to adopt generally accepted accounting principles US Public sector	Objectives: To explore how institutional pressures, influence the decision to adopt or resist the use of generally accepted accounting principles (GAAP) Variables: IV -Coercive pressures: Representatives of credit markets, federal government, organizational politics, Normative pressures: participation of key accounting bureaucrats in professional accounting organisations Professional body (GFOA), Mimetic pressures: Other state government, Others: Fiscal stress, support of key appointed and/or elected	Cross analysis study Structured and unstructured interview Archival documents	Four state government: New York, Michigan, Ohio, Delaware	Adapted from the validated instruments of Meyer and Rowan (1977), DiMaggio and Powell (1983), Yin (1984)	Replication logic Quantitative	Coercive pressure effect in the early decision to adopt GAAP Normative and mimetic pressure (no compelling evidence) affects the late adoption of GAAP Institutional variables provide better insights rather than economic variables	Empirically, difficult to distinguish the three forms of isomorphic pressures Future studies may be aware of how to operationalize mimetic pressures variables Future studies may extend the institutional theory variables and have a statistical model of decision-making process

No	Authors/Title/Publication/ Country/Sector	Objectives of the Study and the Related Variables	Methodology			Analysis Techniques	Result	Comments / Gaps
			Res. design	Sample	Instrument			
		officials, change in elected leadership, size, DV: Decision to adopt GAAP						.
3	Hussain & Gunasekaran (2002) An institutional perspective of non-financial management accounting measures: a review of the financial services industry US Private and public sector	Objectives: To investigate the practice of non-financial performance measurement (NPFM) using institutional theory Variables: IV-Coercive pressures: Association and Central Bank's regulation and control, Socioeconomic/political institution's requirement, regulation and condition, Normative pressures: Management's competence, Management's strategic orientation, Mimetic pressures: Integration of management accounting system and copying best practice performance measurement system, Others: Economic condition., political regulatory, organisational characteristics: Competition DV: Non-financial management accounting practices	Case study Asemi structured interview Archival document review: Corporate plans, annual reports, booklets, relevant official publication	Four banks and financial institutions Senior managers and executives in accounting departments	Basic conceptual framework drawn from Di Maggio and Powell (1991), Meyer and Rowan (1977)	Not stated Descriptive	All the institutional pressures had an impact on NPFM	Suggest to test the model in other types of service organisations

No	Authors/Title/Publication/ Country/Sector	Objectives of the Study and the Related Variables	Methodology			Analysis Techniques	Result	Comments / Gaps
			Res. design	Sample	Instrument			
4	<p>Teo et. al. (2003)</p> <p>Predicting intention to adopt inter-organizational linkages: an institutional perspective</p> <p>Singapore</p> <p>Private sector</p>	<p>Objectives: To examine the factors on the intention to adopt Inter-organisational systems - financial electronic data interchange (FEDI)</p> <p>Variables: IV- Coercive pressures: Perceived dominance of supplier adopters, perceived dominance of customer's adopters, conformity with the parent corporation's practices, Normative pressures: extent of adoption among suppliers, extent of adoption among customers, participation in industry, business, and trade associations</p> <p>Others: Organization size, IT department size, float management practice, extent of EDI applications implementation, DV: Intention to adopt FEDI</p>	<p>A survey</p> <p>Short interviews</p>	<p>3,6063 of top level executives (CEO, CIO, CFO)</p> <p>15 finance managers for interview</p>	<p>Adapted from the validated instruments of Palmer et al. (1993) , Pfeffer and Salancik (1978), DiMaggio and Powell (1983), Azjen and Fishbein (1980) Using a 7 point Likert scale</p>	<p>Confirmatory factor analyses (LISREL) Partial least squares</p>	<p>All three institutional pressures had a very significant influence except perceived extent of adoption among suppliers sub construct</p> <p>Normative pressures is the strongest factor</p>	<p>The first study that conducts systematic tests of a fundamental linkage between institutional theory and adoption studies.</p> <p>Be able to clearly distinguish the three institutional pressures conceptually and empirically on their influence on intention to adopt.</p> <p>Support the applicability of institutional theory for early stage of diffusion.</p>
5	<p>Khadaroo (2005)</p> <p>An institutional theory perspective on the UK's Private Finance Initiative (PFI) accounting standard setting process</p> <p>UK</p> <p>Public sector</p>	<p>Objectives: To examine the PFI accounting standard setting process from an institutional theory perspective</p> <p>Variables: IV-Coercive pressures: Treasury, Audit Commission National Audit Office, Normative pressures: Public accounting firms, trade associations, academicians, professional bodies, Mimetic</p>	<p>Reviewing comments made by the various interest groups of the Accounting Standard Boards (ASB)</p>	<p>5 interest groups: Public sector Private sector contractors and investor Consultants Professional bodies and academia</p>	<p>DiMaggio and Powell (1983), Oliver (1991)</p>	<p>Not stated</p>	<p>All pressures exist in the standard setting process</p> <p>Treasury used the coercive power to urge public sector bodies to voice their opposition to ASB's ED</p>	<p>Variables used limited to the ones that are publicly available</p> <p>Need to develop a specific theoretical framework and empirical analysis to enhance the findings</p>

No	Authors/Title/Publication/ Country/Sector	Objectives of the Study and the Related Variables	Methodology			Analysis Techniques	Result	Comments / Gaps
			Res. design	Sample	Instrument			
		pressures: Among the participants (groups), DV: Decision to adopt GAAP					Public sector bodies done through plagiarizing from one another (mimetic)	
6	Touron (2005) An analysis in the decision to adopt US GAAP by French firms before the creation of the International Accounting Standard Committee France Private sector	Objectives: To explain why US GAAP was adopted by French firms Variables: IV- Coercive pressures: The State, capital supplier, Normative pressures: Auditors, the Stock exchanges, Mimetic pressures: Multinational firms, DV: The decision to adopt US GAAP	Comparative case studies	3 companies	Eisenhardt (1989), Yin (1994)	Descriptive	Normative pressures of auditors and mimetic pressure of imitation contribute to the adoption	Coercive pressure is not significant due to the environment that is not regulated by the law
7	Bovaird & Downe (2006) N Generations of Reform in UK Local Government: Compliance and Resistance to Institutional Pressures UK Public sector	Objectives: To examine the choice in local government modernisation agenda (LGMA) Variables: IV: Isomorphism pressures, DV: Compliance and resistance of reform in UK local government	Case studies Archival document review Semi-structured interviews	Leading politician, the chief executive, and other directors, heads of strategy and policy, senior staff leading	Basic conceptual framework drawn from Di Maggio and Powell (1983)	Not stated Qualitative and descriptive	Evidence of a trend to isomorphism in English local government by central government to create change in make-buy	The institutional isomorphism tends to influence on the decision and the resistance to adapt LGMA Demonstrate that the organisational resistance can be

No	Authors/Title/Publication/ Country/Sector	Objectives of the Study and the Related Variables	Methodology			Analysis Techniques	Result	Comments / Gaps
			Res. design	Sample	Instrument			
				innovation activities, and a range of external stakeholders such as police, voluntary groups, and community groups			decisions in service provision Organisations within the field of English local government shared and communicated such as resistance to adopt policies and practices	examined not only in 'old institutionalism' but also using 'new institutionalism'/neo-institutionalist
8	Tsamenyi et. al. (2006) Changes in accounting and financial information system in a Spanish electricity company: A new institutional theory analysis Spain Private sector	Objectives: To investigate changes in the accounting and financial information system of a large Spanish electricity company Variables:IV -Coercive pressures: Regulatory bodies and Head Office Normative pressures: Professional group, Others: Market forces Intra-organisational power relations, DV: Changes in the accounting and financial information systems	A longitudinal case study Semi structured interviews Analysis of documents such as internal bulletin, annual reports Triangulation approach	Sevillana Company	Otley and Berry (1994), Bonache (1999), Yin (1989), Zilber (2002)	Descriptive	Focus on the interplay between institutional factors, market forces and intra-organisational power relations Coercive pressure of the regulatory environment, normative group of professional group and market forces may affect the decision to change	Limited to a single case study Future studies may include more company for generalizability
9	Khalifa & Davison (2006) SME Adoption of IT: The Case of Electronic Trading Systems Hong Kong	Objectives: To explain the intention of small medium-sized enterprise (SME) brokerages to adopt electronic trading systems (ETS) Variables:IV -Coercive pressures: Customers,	Semi-structured interview A survey	20 managers 500 brokerages	Chewos, Benbasat and Dexter (2001), Shapero and Sokol (1982)	Partial Least Squares regression	Coercive, normative and mimetic pressures are significant	Future studies could distinguish between internal normative pressures and external normative pressures

No	Authors/Title/Publication/ Country/Sector	Objectives of the Study and the Related Variables	Methodology			Analysis Techniques	Result	Comments / Gaps
			Res. design	Sample	Instrument			
	Private sector	Normative pressures: Employees, Mimetic pressures: Competitors, Others: Feasibility, desirability, DV- The intention to adopt electronic trading systems (ETS)			Using a 7 point Likert scale			Future studies could enhance by examining the benefits of adoption
10	Ashworth et. al. (2007) Escape from the Iron Cage? Organizational Change and Isomorphic Pressures in the Public Sector UK Public sector	Objectives: To evaluate whether organizational change in the public sector is consistent with institutional perspective Variables: IV- Coercive pressures: Central government, Normative pressures: Audit Commission and Improvement and Development Agency (IDeA), Mimetic pressures: Local councils, DV- Organisational change	An electronic survey	101 local councils Total respondents are 1,245 (2002) and 1,245 (2004) of Chief Executive, Head of Paid Service	Boyne, Martin and Walker (2004), Boyne and Walker (2004) Using a 7 point Likert scale	Mean, coefficient Descriptive	Institutional pressures may be strong in a centralized state such as the UK and on a set highly structured organisation such as local authorities	Be able to distinguish between two definitions of conformity (compliance and convergence) Future studies could empirically test on the other practices Not supported with extensive statistical test
11	Falkman & Tagesson (2008) Accrual accounting does not necessarily mean accrual accounting: Factors that counteract compliance with accounting standards in Swedish municipal accounting Sweden Public sector	Objectives: To describe and explain the impact of the legislation and standard setting in the Swedish municipal sector Variables: IV- Coercive pressures: Central government and political majority, Normative pressures: Auditing firm, Mimetic pressures: Auditing firms, Others: Size, time, turnover ,total of government grant DV- Decision to adopt GAAP	Triangulation approach An online survey Documentary study Interviews	290 of financial directors of the municipalities 12 financial managers for interviews	DiMaggio and Powell (1983), Oliver (1991)	Correlation matrix t-Test Pearson Chi- square test Bivariate test Multiple and linear regression	Compliance with accounting standards is low Institutional variables (audit firms) explain that large municipalities perform better than medium and small municipalities	More research is needed in order to develop a theoretical framework that focuses on municipal accounting The need for more process-oriented research about standard setting and implementation of accounting practices in a municipal context

No	Authors/Title/Publication/ Country/Sector	Objectives of the Study and the Related Variables	Methodology			Analysis Techniques	Result	Comments / Gaps
			Res. design	Sample	Instrument			
							Government grants and political majority not significant	
12	Williams, Lueg, Taylor, & Cook (2009) Why all the changes?: An institutional theory approach to exploring the drivers of supply chain security (SCS) US Private sector	Objectives: To identify and explore the environmental drivers that motivate firms to engage in supply chain security Variables: IV -Coercive pressures: Government and customers Normative pressures: Society Mimetic pressures: Competitors DV -The decision to engage in supply chain security, Others: Industry types	A semi structured interview	17 managers worked in a supply chain management environment	Not stated	Qualitative	All the variables create pressures for firms to engage in supply chain security	Suggested to have empirical testing for enhanced analysis part
13	Ugrin (2009) The Effect of System Characteristics, Stage of Adoption, and Experience on Institutional Explanations for ERP Systems Choice US Private sector	Objectives: To examine the intention to adopt Enterprise Resource Planning (ERP) Variables: IV - Coercive pressures: Dominance of supplier adopters, dominance of customer's adopters and parent companies, Normative pressures: Extent of adoption among suppliers and extent of adoption among customers Mimetic pressures: Extent of adoption among competitors and success of competitor adopters DV: Intention to adopt ERP system	A survey	83 CIOs, CEOs, CFOs, and materials managers	Adapted from the validated instruments of Teo et al (2003) and Azjen & Fishbein (1980) Using a 7 point Likert scale	Regression analyses Correlation matrix	Mimetic and normative pressures influence ERP adoption decisions Coercive pressures not significant due to respondents worked in their parent companies	Future studies can include other factors within an organisation that may influence adoption decisions. Only focus on adoption intention not adoption decisions.

No	Authors/Title/Publication/ Country/Sector	Objectives of the Study and the Related Variables	Methodology			Analysis Techniques	Result	Comments / Gaps
			Res. design	Sample	Instrument			
14	Henderson et.al. (2011) Understanding the Intention to Adopt XBRL: An Environmental Perspective US Private sector	Objectives: To investigate the influence of perceptions of environmental factors on an organisation's intention to adopt Extensible Business Reporting Language (XBRL) Variables: IV- Coercive pressures: Trading partners, Normative pressures: Auditors, Professional bodies, Mimetic pressures: Multinational firms, Others: Network externalities, Related technologies, DV: The decision to adopt XBRL	A survey	52 companies of CIO and CFO	Netemeyer et al. (2003), Teo et al. (2003), Ugrin (2009)	Partial Least Squares regression	Mimetic pressures and normative pressures are significant Coercive pressure of trading partner is not significant due to the practice of XBRL not at the peak at the time of data collection	Future studies could use the model to investigate other adoption practices and focus on the lack of adoption
15	Zheng et. al. (2012) E-government adoption in public administration organizations: integrating institutional theory perspective and resource- based view China Public sector	Objectives: To investigate the adoption of government-to government (G2G) information system public administration organisations by top management committee (TMC) Variables: IV- Coercive pressures: Superior organisations, Normative pressures: User, Mimetic pressures: Peer organisations, Other: Top management commitment, financial resources and IT human resources, DV: Adoption intention of G2G	A survey	148 senior executives of public administration organisations	Adapted from the validated instruments of Teo et al (2003) and Azjen & Fishbein (1980) Using a 7 point Likert scale	Structural equation modelling Partial least squares	Coercive and normative pressures influence TMC and internal resources to adopt G2G Mimetic pressures do not influence TMC but indirectly influence TMC via coercive pressures	Developed measurements for the three institutional pressures as formative constructs and suggested future studies to advance the measurement
16	Ramakrishnan, Jones, & Sidorova (2012) Factors influencing business intelligence (BI)	Objectives: To examine external pressures that influence the relationship between an organisation's business intelligence (IB) data	A survey document review	63 information technology professionals	Adapted from the validated instruments of	Exploratory and confirmatory factor analyses	Isomorphism pressures influence organisations to adopt BI to	Extend existing research on how organisations approach data- related decisions in

No	Authors/Title/Publication/ Country/Sector	Objectives of the Study and the Related Variables	Methodology			Analysis Techniques	Result	Comments / Gaps
			Res. design	Sample	Instrument			
	data collection strategies: An empirical investigation US Private sector	collection strategy and the purpose for which BI is implemented. Variables: IV: Isomorphism pressures and competitive pressures DV: Adoption of BI	Semi- structured interviews	and top level managers	Liang et al. (2007) – institutional theory Hwang, Ku and Yen (2004), Zhu, Dong et al. (2006) and Thong (1999)- competitive pressures	Partial least squares	achieve consistency of data	system implementations. Future studies can include internal factors such as technical issues, organizational infrastructure, and resource constraints.
17	Yoon & George (2013) US Private sector	Objectives: To identify the factors that influence organizational intent to adopt virtual worlds Variables: IV- Coercive pressures: Customers, Normative pressures: Suppliers, Associations and Professional bodies, Mimetic pressures: Competitors, Others: Top management support, organizational size, organizational readiness, firm scope, competition, compatibility, security concern and relative advantage, DV: Organizations' intention to adopt	An online survey A secondary data (Hoovers Company Information Database)	Members of information system professional associations	Adapted from the validated instruments of Son and Benbasat, (2007), Khalifa & Davidson (2006)	Partial least squares approach (confirmatory factor analysis) to structural equation modelling	Relates to institutional theory factors Mimetic pressure and normative pressures were significant	Both mimetic and normative pressures are key predictors on the intention to adopt as had a stronger effect compared to other variables. Future studies may use additional variables to further explain the organisation's intention

No	Authors/Title/Publication/ Country/Sector	Objectives of the Study and the Related Variables	Methodology			Analysis Techniques	Result	Comments / Gaps
			Res. design	Sample	Instrument			
18.	Ahrens & Ferry (2016) UK Public sector	Objectives: To explore how local government act as an <u>institutional entrepreneur</u> Variables: IV- Rules, <u>teleoaffective structure,</u> <u>practice memory and cultural</u> <u>memory</u> DV: <u>Changes of organisational</u> <u>practices</u>	A field study of budgeting of Newcastle City Council Interviews of 50 officers, observation and documentation review	Officers of Newcastle City Council	N/A	N/A	Teleoaffective structures and practice memory were significant factors in institutional change	Agents in this case a local government can be both agents and marginal at the same time. Future studies could relate the impacts on the austerity measures taken by central government
19.	Modell (2012) Sweden Public Sector	Objectives: To understand <u>how management control is</u> <u>implicated in the</u> <u>institutionalisation of the</u> <u>notion of strategy</u> Variables: IV- Coercive pressures: <u>Political regulation</u> <u>and Normative pressures:</u> <u>Management control practices</u> DV: <u>Strategy formation</u>	Extant empirical research and archival data Interviews of 19 respondents	Swedish central government of the Swedish National Board of Student Aid (SNBSA)	N/A	A systematic for respondents validation Thematic coding and pattern matching	Regulatory mechanisms played a key role Political regulation influenced the institutionalisation of the notion strategy	Further empirical research could provide more critical reflection regardless of theoretical underpinnings

CHAPTER 3: RESEARCH MODEL AND HYPHOTHESES

This chapter develops the research conceptual framework, hypotheses and theoretical issues related to the factors that influence the decision to use forensic accounting services to detect and prevent fraud within English local authorities. In the first section, an overview of an initial model of organisational intention to use forensic accounting services is described. The following sections explore the key factors identified that represent variables in the model. In order to address the research questions, fourteen hypotheses both on institutional theory based and other salient factors are developed. Then, the operationalisation of the control variables for this study is discussed. Thereafter, a conclusion of the chapter is presented.

3.1 Research Model

The literature reveals that institutional theory has a significant insight regarding the importance of institutional environments to organisational structures and actions (e.g. Ahrens & Ferry, 2016; Arroyo, 2012; Ashworth et al., 2007; Baker, Bédard, & Prat, 2014; Brammer, Jackson, & Matten, 2011; Carpenter & Feroz, 2001; Currie, 2012; Currie & Guah, 2007; Griffith, Hammersley, & Kadous, 2015; Heikkilä, 2013; Henderson et al., 2011; Jensen et al., 2009; Kipping & Kirkpatrick, 2013; Lapsley & Pallot, 2000; Macfarlane et al., 2013; Messerschmidt & Hinz, 2013; Petracci & Rammal, 2014; Pilcher, 2011; Sharma, Lawrence, & Lowe, 2010; Tolbert & Zucker, 1983; Villadsen, Hansen, & Mols, 2010). The intention of the decision to use forensic accounting services refers to an organisational innovation. According to Carpenter & Feroz (2001), organisational innovation concerns the adoption or intention of process that is considered new in terms of being different from the organisation's own tradition. Thus, the intention of utilising forensic accounting services to detect and prevent fraud by English local

authorities that had previously employed traditional methods represents an organisational innovation. However, to the researcher's knowledge, there is no research on the investigation of institutional variables and the intention to use forensic accounting services to detect and prevent fraud by local authorities.

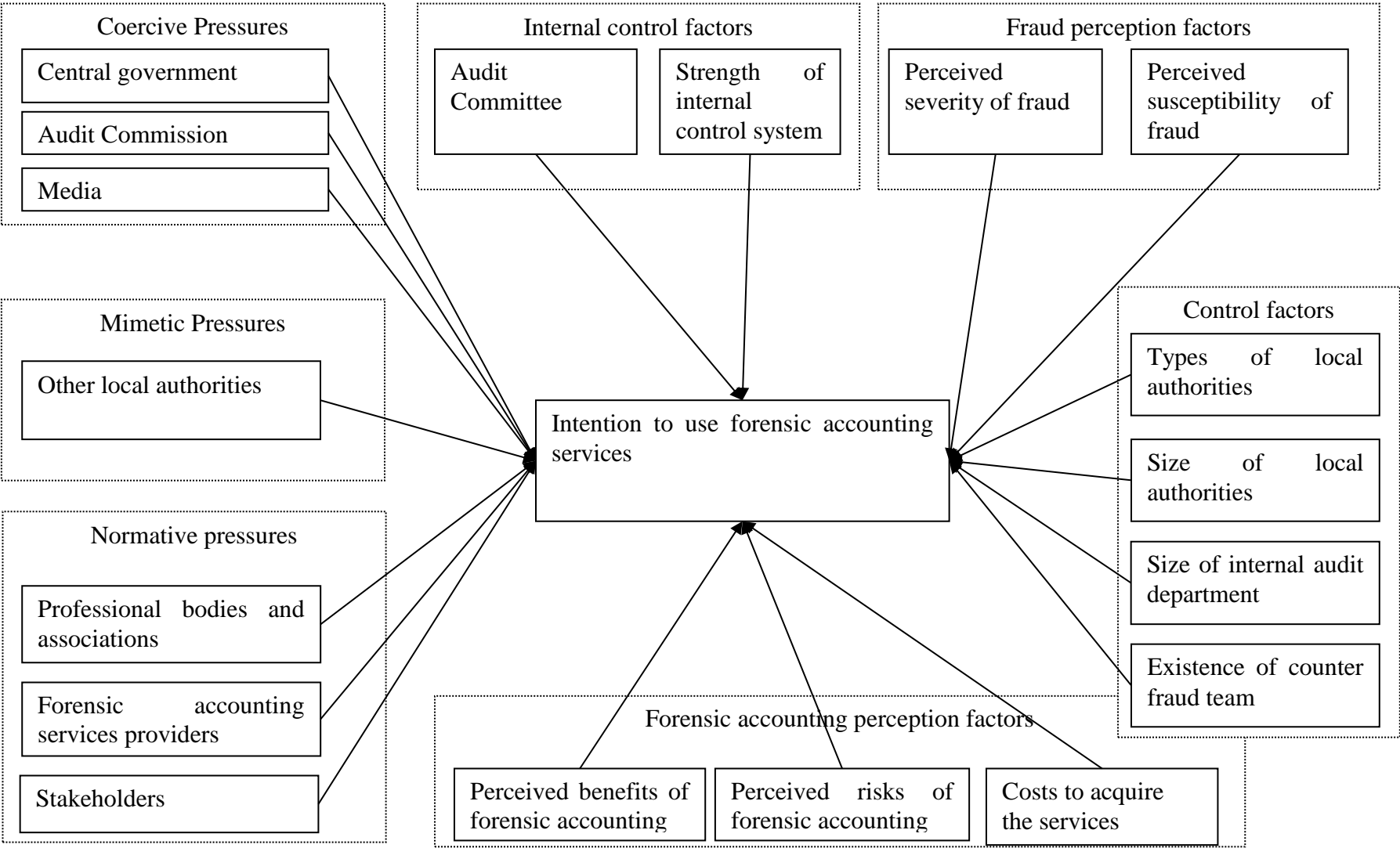
The central tenet of institutional theory posits that organisations encounter face pressures to compete for resources, political power, economic and social fitness, and customers with other organisations as avoiding the pressures may lead into question the organisation's legitimacy and thus affect its ability to secure resources and social support (DiMaggio & Powell, 1983; Tolbert & Zucker, 1996; Muthusamy, 2011). According to Burt (1987), organisations' response to those pressures is to be isomorphic with their environment, which includes both interconnectedness and structural equivalence. Interconnectedness refers to inter-organisational relations characterised by the existence of transactions tying organisations to one another, while structural equivalence refers to the occupying of a similar position in an inter-organisational network. The result to become similar in structure, forms, and process among the organisations' field is defined as '*institutional isomorphism*' (Ashworth et al., 2005). Accordingly, as explained by DiMaggio & Powell (1983), the three types of isomorphic pressures referred to as coercive, mimetic, and normative can be distinguished in which coercive and normative pressures refer to the interconnected relations while mimetic pressures operate through structural equivalence listed as below:

- i. Coercive isomorphism- whereby impinging external factors (e.g. government policy, regulation, supplier relationship) exert force on organisations to adopt specific internal structure and procedures)
- ii. Mimetic isomorphism- whereby organisations emulate the internal structures and procedures adopted by other organisations
- iii. Normative isomorphism- whereby organisations adopt the structures and procedures advocated by particular dominant professions, professional bodies and/or consultants

(Moll et al., 2006)

Additionally, the literature on fraud in English local authorities indicated that central government and other agencies such as the Audit Commission, the DWP, and the National Fraud Authority play a major role to provide assistance in reducing fraud (Audit Commission, 2012b; Button, 2011; Home Office, 2012; Lane, 2011). The seriousness of fraud and the ability of forensic accounting to uncover and prevent fraud cases has been highlighted by e.g. Crumbley & Apostolou (2002); Gray (2008); Muthusamy (2011); Stanbury & Paley-Menzies (2010). Thus, the current research will integrate institutional variables, fraud perception variables, forensic accounting perception variables and internal control variables as underlying factors as shown in Figure 3-1.

Figure 3-1: Initial Research Model



The initial research model, illustrated in Figure 3-1, depicts an organisational intention model with utilisation or intention to use forensic accounting services. As highlighted in Teo et al. (2003, p. 27), most of the measures developed in empirical studies on institutional-based theories are too idiosyncratic to fit in the current research. Thus, conceptual definitions from the literature is analysed to develop the foundation of the research model. The variables drawn from the institutional theory represent the isomorphic pressures for change; coercive, mimetic, and normative: specifically, coercive pressures represented by central government, the Audit Commission, and media. Mimetic pressures are based on how a local authority perceived the used and the success in used forensic accounting by other local authorities, while normative pressures consist of professional bodies, associations, and stakeholders. In addition, other organisational factors identified include variables from studies on fraud and forensic accounting. The present research believes that combining organisational variables within the institutional framework and other salient factors can enhance the proposed model. The following describes a discussion of the related variables used in the initial research model.

3.2 Variables in the Research Model

This section examines the variables used in the research model. First, factors from coercive pressures were discussed, followed by mimetic pressures and normative pressures. Next, factors within forensic accounting perception, fraud perception, internal control, and control variables were highlighted.

3.2.1 Coercive Pressures

Coercive pressures can be defined as *‘both formal and informal pressures exerted on organisations by other organisations upon which they are dependent and by the cultural expectations in the society within which organisation function’* (DiMaggio & Powell, 1983, p. 150). Empirical evidence revealed that coercive pressures on organisations may stem from a range of sources including resource-dominant organisations, and regulatory bodies. In other words, the role of central government might influence local authorities in the decision-making process either through legal coercion or voluntary diffusion (Oliver, 1991). According to Pfeffer & Salancik (1978), a dominant factor that controls scarce and vital resources may demand that organisations dependent on its adopt structures or programs that serve its interests, and these resource-dependent organisations may comply with the demands to secure their own survival. Local authorities, like firms, need resources from the environment to survive, for instance central government as a resource provider can impose power over the particular entities (Carpenter & Feroz, 2001).

3.2.1.1 Central government and related agencies

In the current research context, coercive pressures may primarily relate to the form of certain legislations, namely, Local Government Act (1999), Improvement and Development Agency (IDeA), and Best Value (Ashworth et al., 2007). The IDeA is a body under the LGA to support improvement and innovation in local government. The introduction of the Local Government Act (1999) and Best Value regime by central government entails a clear indication of changes in organisational structure, culture, strategy formulation processes, and strategy content: Boyne & Walker (2004); Vincent-Jones (2000), and emphasise the local governments’ statutory

obligations: Ashworth et al. (2007). Specifically, Button et.al (2007) acknowledged that the emergence of Counter Fraud Specialists (CFSs) in local governments is due to a range of initiatives by central government to counter social security fraud back in 1979 (p. 196).

Recently, central government, through the DCLG, appointed PwC to carry out investigations on the allegations of poor governance and possible fraud of Tower Hamlets authority in 2014 (PricewaterhouseCoopers, 2014a). The findings of the report by PwC, among others, suggested that the authority *'failed to comply with its best value duty'*. As a result of the investigations, central government instructed commissioners to take control of grant making powers and to appoint key officers. In this scenario, the instructions by central government for the case to be investigated are referred to as coercive pressures.

Additionally, the passage of the Fraud Act 2006, and the updated publication of the Fraud Review 2006 by central government needed a response from organisations to adopt strategies for detecting, investigating, and prosecuting fraud (Frimpong & Baker, 2007). At the same time, central government established the NFA as an executive agency. The NFA is responsible for increasing protection for the UK economy from consequences caused by fraud. Local authorities were among the partners working together with the NFA in order to prevent fraud. Since the establishment of the NFA, the estimation cost of fraud through a report *'Annual Fraud Indicator'* was published in 2011 and 2012. The report contains data regarding the nature and extent of fraud across public and private sector including local authorities. Another government body that produced the estimation costs of fraud is the Department for Work and Pensions (DWP) particularly for benefit fraud such as housing benefit (National Fraud Authority, 2012a). Both reports of fraud by the NFA and the DWP indicated the extent of fraud within local authorities was significant and responses to counter fraud issues are vital.

As such, local authorities have intent to use forensic accounting services when there are pressures from central government either through implementation of certain policies or produced reports on the extent of fraud that require local authorities to combat fraud effectively.

Thus, it is posited that;

H1: Directives, rules, and policies (including initiatives and action plan) from central government and reports on fraud by the related government agencies will positively influence the intention of English local authorities to use forensic accounting services

3.2.1.2 Audit Commission

The role of the Audit Commission in the local government is governed by the Local Government Finance Act 1982 where the main responsibilities are as an external auditor, and appointing auditors from accounting firms to conduct audits (Audit Commission, 2012a). Apart from being an external auditor, the Audit Commission is also empowered by legal requirements to conduct inspection and assessment under Local Government Act 1999 (Gomes, 2006), and to perform the value for money (economy, efficiency, and effectiveness) of operational arrangements and accomplishments (McSweeney, 1988). The Audit Commission is recognised as the leading body working with local government to combat fraud and corruption (Audit Commission, 2012b). This can be evidenced through establishing the NFI, reporting on Protecting the Public Purse, and promoting best practice to counter fraud (Audit Commission, 2012b). Under the Best Value regime, the Audit Commission is identified as being able to exercise influence in local government decision making (Gomes, 2006). Although the Audit Commission ceased their office in April 2015, its legacy to influence can be assured to continue.

Thus, it is posited that;

H2: Reports on fraud and recommendations by the Audit Commission will positively influence the intention of English local authorities to use forensic accounting services

3.2.1.3 Media

The news media are one of the primary ways that the public learns about organisations, their activities and their connections to matters of public interest (Einwiller, Carroll, & Korn, 2010). In democratic systems (such as in the UK), media play a role as informal forum for political accountability (Bovens, 2007). According to Reiner (2007) media and crime analysts examine three correlated issues which are the content, consequences and cause of media representation of crime. Levi, 2006 stated that '*crimes of deception treated by the mass media as extensions of infotainment*', *such as individual and corporate celebrities in trouble, short fraud events (like identity fraud) connected to organized crime or terrorism or long-term concealment or fraud or business people/politicians to be hypocrites*' (p. 187).

There are various key players in media coverage of financial crimes such as fraud; the victims, offenders, institutions of formal governance (police, prosecutors, regulators, and trials) but also third parties. The third parties include business pressure groups and trade associations, local and global corporates, NGOs, or even forensic accounting firms (Levi, 2006). Previous studies suggested that messages disseminated using mass media, such as television and newspaper, are likely to influence an adopter's intention (Rogers, 1995). A study by Van Peurse & Balme (2010) analysed the role of the media towards the practice of quality and threat of disestablishment of the New Zealand Serious Fraud Office based on the institutional

perspective. The findings of the study show that media could be a powerful social and functional pressure for change. For example, the media in the UK highlighted news of fraud with the headline '*Councils lose £7 million in false bank account scam*' (BBC News, 2016), '*Local taxpayers are being ripped off by fraud*', '*Councils battle fraud deception*' and '*Councils battle fake housing and tax fraud*' (ITV News, 2012).

In a case of allegations of poor governance that led to fraud investigations of Tower Hamlet authority, the intervention of central government and the findings of the investigations had been highlighted by media such as the Daily Mail, Telegraph, ITV, and BBC. The mentioned news headlines could provide a negative perception among the public or taxpayers toward the issues of fraud in a local authority. Hence, local authorities that are accountable to protect the public funds need to take a proactive measure to avoid the negative perception such as acquiring professional services of forensic accounting services.

Thus, it is posited that;

H3: News of fraud highlighted by the media will positively influence the intention of English local authorities to use forensic accounting services

3.2.2 Mimetic Pressures

According to DiMaggio & Powell (1983), the mimetic pressures may result organisations to have similar practices of other organisations within their environment that they perceive to be more legitimate or successful. Cyert and March (1982) explain that *'the advantages of mimetic behaviour in the economy of human action are considerable; when an organisation faces a problem with ambiguous causes or unclear solutions, problematic search may yield a viable solution with little expense'* (as cited in DiMaggio & Powell, 1983, p. 151) or can result from efficient response to uncertainty (DiMaggio & Powell, 1983). The actions to become like other organisations can be categorised into: imitating the organisations which have similar structure, strategy, resources, and constraints within the population, and imitating that refers to the perceived success of similar organisation that already adopted the practice (Haveman, 1993).

3.2.2.1 Other local authorities

A number of studies have found the evidence of mimetic change in examining the adoption of new forms, structures, and practices of organisations (Carpenter & Feroz, 2001; Khadaroo, 2005; Teo et al., 2003; Tolbert & Zucker, 1983). In the context of the current research, the intention of local government to use forensic accounting services can be influenced by the extent of using forensic accounting services by other local authorities, and perceived success of other local authorities that had used forensic accounting services.

Thus, it is posited that;

H4: The extent and perceived success of using forensic accounting services by other local authorities will positively influence the intention of English local authorities to use forensic accounting services

3.2.3 Normative Pressures

According to DiMaggio & Powell (1983), normative pressures stem '*primarily from professionalisation*' leading to a similar form. Professionals initiate changes in the organisations '*which are a direct result of what they believe are accepted modes and rules of behaviour*' (James, 2009, p. 366). The modes and rules of behaviour are being promulgated to the professional through education and/or through membership of professional societies (DiMaggio & Powell, 1983). Similarly, Maingot (2006) acknowledged that normative pressure represents the influence of normal standards of professionalism, the adoption of up to date, and effective techniques by a professional community. Thus, the diffusion of new practices and information exchange within organisations may be facilitated by the professional networks within an organisational environment (DiMaggio & Powell, 1983). Accounting studies advocate that the normative pressure of professional roles is a determinant of accounting system developments in the public sector (Järvinen, 2006; Kurunmaki, Lapsley, & Melia, 2003).

3.2.3.1 Professional bodies and associations

In the current research context, the CIPFA, and the Public Risk Management Association (Alarm) are among the professional bodies and associations which had a direct relationship with local government, respectively (Lane, 2011). The CIPFA which specialised in the public services has the responsibility to set the accounting standard for local government (CIPFA, 2008a), and has established a good practice for local government to counter fraud strategies together with the Audit Commission (Lane, 2011). Alarm is the public risk management association providing the best practice for the UK public services including local government (Alarm, 2012). Both the CIPFA and Alarm also highlight the importance of sufficient

investments in counter fraud function, professionalising investigators, and intelligence development and sharing (Lane, 2011).

Another professional body, the ICFS is one of the first qualification based counter fraud professional bodies in the UK which gave the CFS accreditation (Frimpong & Baker, 2007). The ICAEW is the only professional body in the UK catering for Forensic Accountant Accreditation on voluntarily basis (ICAEW, 2012a). Apart from this, a number of related associations within local authorities include the LGA, the Society of Local Authority Chief Executives (SOLACE), Alarm, and LAIOG. Accordingly, institutional theory suggested that the normative pressures to use forensic accounting services by the local government may stem from the professional education or membership, the existence of associations in the network environment, and the interaction of organisation-supplier (Teo et al., 2003) that '*span government organisations and promote specific financial management practices*' (Carpenter & Feroz, 2001, p. 570).

Thus, it is posited that;

H5: Recommendations by the professional bodies and associations to effectively detect and prevent fraud will positively influence the intention of English local authorities to use forensic accounting services.

3.2.3.2 Forensic accounting services providers

Previous institutional theory studies e.g., Teo et al. (2003) and Yoon & George (2013) found that pressures from supplier were a significant predictor of innovation adoption. For the purposes of this study, forensic accounting providers, which act as a potential supplier to local authorities, published articles and reports on the extent of fraud, promoted their services, and had the expertise and capabilities to detect and prevent fraud. For example, the Big Four accounting firms of KPMG, PricewaterhouseCoopers, Deloitte and EY frequently promoted their services through seminar/courses, news and articles in journals/magazines, and reports of fraud based on their survey. Additionally, accounting firms like PKF collaborated with the University of Portsmouth to publish fraud report specifically in local authorities context (Gee et al., 2012).

Thus, it is posited that;

H6: The reports on frauds and the promotion of forensic accounting services in the market by the forensic accounting services providers together with their expertise and capabilities to perform forensic accounting will positively influence the intention of English local authorities to use forensic accounting services.

3.2.3.3 Stakeholders

Stakeholders can be defined as ‘any group or individual who can affect or is affected by the achievement of an organisation’s purpose’ (Freeman, 1984, p. 46). The definition of stakeholder by Freeman (1984) was the most classic and commonly used in various studies (Clement, 2005). Later, Freeman defined stakeholders as ‘those groups who are vital to the

survival and success of the corporation’ (Freeman, 2002, p. 41). Within the institutional theory, it is argued that stakeholder engagement is important for organisations to seek social legitimacy (Sarkis, Gonzalez-Torre, & Adenso-Diaz, 2010). In the context of English local government, the stakeholders include the management, councillors, local business, and local residents (Gomes, 2006). For example, the taxpayers or local residents may find information on the seriousness of fraud from news and the consequences of fraud might affect the public services received. Hence, this group of stakeholders could pressure their respective local authority accountable to protect taxpayers’ money by having forensic accounting services to detect and prevent fraud.

Thus, it is posited that;

H7: Pressures from stakeholders will positively influence the intention of English local authorities to use forensic accounting services

3.2.4 Forensic Accounting Perception Factors

This section describes factors related to the forensic accounting perception consisting of perceived benefits, costs to acquire the services, and perceived risk of using forensic accounting services.

3.2.4.1 Perceived benefits of forensic accounting services

Perceived benefits of forensic accounting refer to the perceived foreseeable benefits that drive local government in using forensic accounting services to detect and prevent fraud. Forensic accountants can be used as a tool in dealing with fraud detection and investigation due to the limitation in fraud detection by the auditor (Apostolou & Crumbley, 2005; Digabriele, 2008),

and providing expertise in computer forensic to counter computer based fraud or cybercrime (Pearson & Singleton, 2008). The examples of benefits of forensic accounting include being able to effectively evaluate the internal control systems, setting up fraud prevention systems, investigating forms of fraud (Ramaswamy, 2005). As suggested by Gee et al. (2011), Smith (2005) and Apostolou & Crumbley (2005), fraud risk assessments are essential to identify potential fraud threats and weaknesses in controls or can act as a first line defence, although preventive measures cannot guarantee that fraud will not be committed. As such, the use of forensic accounting services will considerably deter fraud within organisations (Muthusamy, 2011).

The UK central government emphasized among others, to improve asset tracing or recovery in the event of fraud (Home Office, 2011) which can be a difficult and lengthy process. A qualified fraud investigator that possesses skills and knowledge and adopts good practice could have impact on the identification, detection and recovery rates (Audit Commission, 2012b). According to Ibex & Grippo (2011), fraud investigation by forensic accounting services often involves fund or money tracing, asset identification and recovery. The providers of forensic accounting services such as PKF (UK) LLP claim that their staff had substantial experience in fraud investigations and considerable experience working with related bodies such as the Serious Fraud Office, National Crime Squad, Financial Services Authority and the Crown Prosecution Services.

Thus, similar to a study by Muthusamy (2011), it is posited that;

H8: Perceived benefits of forensic accounting will positively influence the intention of English local authorities to use forensic accounting services

3.2.4.2 Costs to acquire forensic accounting services

A related forensic audit is not only time consuming but includes significantly higher costs compared to normal audit (Apostolou & Crumbley, 2008; Muthusamy, 2011). This is due to the extent of the forensic audit that determines the expense to be incurred, which can be exorbitant (Grippe & Ibex, 2003, Muthusamy, 2011). For example, the 2001 and 2002 financial statement fraud of HealthSouth, the leading providers of healthcare in the US incurred a total of \$276.8 million for the total forensic accounting services fees (Apostolou & Crumbley, 2008; Muthusamy, 2011). Previous studies on the decision to outsource (e.g. Gewald & Dibbern, 2009; Speklé, van Elten, & Kruis 2007; and Balakrishnan et al., 2010), and the organisational intention to adopt (Wymer & Regan, 2005) found that financial costs are a significant factor that influences the decision. Recently, when central government decided to use services from external provider PricewaterhouseCoopers to investigate mismanagement in Tower Hamlet authority, the total cost involved was more than £1 million (The Telegraph, 2014).

In the public sector, under the NPM, a standard to measure performances and managing by results refers to concept of value for money (Goddard, 2005). Within management consultants' perspectives in the UK public sector, Corcoran & Mclean (1998) expressed that value for money was concerned with balancing conflicting elements (product or services with costs, and the risk) to achieve the best deal. The authors claimed that the principle of value for money is applicable to the procurement of management consultancy but the assessment of value for money can be challenging (prior to the appointment of consultants and post completion of project). The main objective of applying the principle of value for money is to ensure the taxpayer's money is well spent but more urgently, it was an imperative directing them to keep their costs down, e.g. to operate efficiently, effectively and economically.

Thus, similar to a study by Muthusamy (2011), it is posited that;

H9: The costs of forensic accounting services will negatively influence the intention of English local authorities to use forensic accounting services

3.2.4.3 Perceived risks of forensic accounting

Risks refer to ‘*the measurable probability of the negative deviation of a target value from a reference value*’ (Gewald & Hinz 2004, p. 988). Perceived risk is often used variable to explain the risk perception and risk deduction methods by consumers (Mitra, Reiss, & Capella, 1999). The implications of perceived risk have been examined in outsourcing information systems studies (e.g. Currie, 2012; Gewald et al., 2006; Gonzalez, Gasco, & Llopis, 2010) and outsourcing in internal audit services (e.g. Caplan & Kirschenheiter, 2000; Peursem & Jiang, 2008; Selim & Yiannakas, 2000). The purchase of professional services (forensic accounting) can involve significant investments of time, money and personnel without any guarantee of a successful outcome (Mitchell, 1994). Jacoby & Kaplan (1972) have classified five types of risk: financial, performance, physical, psychological and social risks. However, there is ‘*no consensus regarding the common set of risk facets (types) applicable across situation*’ (Dowling 1986, p. 195).

According to Corcoran & Mclean (1998), one of the major problems in purchasing management consultancy services within the public sector, is related to buyer’s difficulty in judging what is being offered in which the services often appear ‘*intellectually intangible*’ to the potential buyers (Corcoran & Mclean, 1998). Additionally, the degree of confidentiality of the potential buyers is also impacted by:

- i. their degree of previous experience. The public sector still considered lack of experience partly due to staff movement policies and concern of sources.
- ii. the multi-diversified business of management consultants e.g. from planning, advice to review.
- iii. the potential impact of the services itself. The nature of management consultancy work (e.g. strategic planning, organizational restructures) often affects the very core of an organisation including its reputation.

(Corcoran & Mclean, 1998)

Perceived risks in this study refer to the uncertainty faced by local authorities, where the consequences of the decision cannot be anticipated when acquiring forensic accounting services. Financial risk is *'the risk that the actual costs may exceed the planned/budgeted costs of the outsourcing engagement'* (Gewald et al. 2006, p. 82). Similarly, for the purposes of this study, financial risk refers to the financial costs of acquiring forensic accounting services. Thus, the financial risk was considered separately as individual constructs known as costs to acquire forensic accounting services within the forensic accounting perception factors (Muthusamy, 2011). The type of perceived risk operationalized in this study was performance risk, which is the risk that the service provided by the forensic accounting providers will not be delivered as expected by local authorities (adapted from Gewald et al. (2006). For example, as a credence based service, the pre-purchase information and knowledge on the services to be acquired are naturally difficult to realize (Mitra et al., 1999). As such, the potential buyers of the services have to manage the risk before considering using the services. Additionally in the detection of fraud, there are possibilities that the forensic accountants might miss something or not be able to find anything. Therefore, *'the perceived risks of forensic accounting services will negatively influence the intention to acquire forensic accounting services'* (Muthusamy, 2011, p. 92).

Thus, similar to a study by Muthusamy (2011), it is posited that;

H10: Perceived risks of forensic accounting will negatively influence the intention of English local authorities to use forensic accounting services

3.2.5 Fraud Perception Factors

This section describes the fraud perception factors of perceived severity of fraud and perceived susceptibility to fraud.

3.2.5.1 Perceived Severity of Fraud

Perceived severity of fraud refers to the serious consequences if the local government is victimised by fraud. For example, the financial costs (loss of fraud, the costs of preventing before the event, costs of responding to fraud after the event), '*management costs (distracted management time due to the diversion of focus to fraud, dealing with litigation issues)*' (Muthusamy, 2011, p. 116), and unquantifiable consequences (image and reputation). According to Bierstaker et al. (2006), organisations should consider investing in highly effective fraud prevention and detection methods to avoid potential loss. In order to avoid the serious consequences of fraud, local government can take proactive measures such as using forensic accounting services.

Thus, it is posited that;

H11: Perceived severity of fraud will positively influence the intention of English local authorities to use forensic accounting services

3.2.5.2 Perceived Susceptibility to Fraud

Perceived susceptibility of fraud refers to the local government's perception towards the likelihood of fraud that might occur. The evidences of fraud in local government as reported in the Annual Fraud Indicator (National Fraud Authority, 2012a) is estimated at £2.2 billion in 2012. If local government believes that they are not victimised by fraud, then the '*perceived susceptibility of fraud is low*' (Muthusamy, 2011, p. 117). Hence, if there is a perceived susceptibility, then local government may use proactive measures to counter the risk of fraud such as employing the forensic accounting services (Muthusamy, 2011).

Thus, similar to a study by Muthusamy (2011), it is posited that;

H12: Perceived susceptibility to fraud will positively influence the intention of English local authorities to use forensic accounting services

3.2.6 Internal Control Factors

This section discusses internal control factors comprising the audit committee and the strength of internal control system.

3.2.6.1 Audit Committee

As a subcommittee of the governing body, an audit committee's objectives are to provide assurance on financial and compliance issues through increased scrutiny, accountability, the efficient use of resources, and as an advisory function (Magrane & Malthus, 2010). According

to Vanasco (1994), the UK's Cadbury Committee report is the most significant world-wide pertaining to the corporate governance that stressed audit committee oversight as a significant factor in implementing appropriate corporate accountability. A strong, independent audit committee has increasingly become an essential part of an organisation's governance (Harrast & Mason-Olsen, 2007). However, audit committee of local government in England is not mandatory like the private sector (CIPFA, 2005). In 2005, CIPFA published '*Audit Committees Practical Guidance for Local Authorities*', outlining that audit committees are a key component in the overall corporate governance process. A good audit committee is characterised by a strong chairman, independence, the ability to challenge the executive, and a membership that is balanced, objective and knowledgeable (CIPFA, 2005). Therefore, audit committees can have influence in relation to the fraud detection and prevention such as give recommendation to the management of local government to use forensic accounting services.

Thus, it is posited that;

H13: The existence and the effectiveness of the Audit Committee will positively influence the intention of English local authorities to use forensic accounting services

3.2.6.2 Strength of Internal Control System

Internal controls in the organisations are the front line defence in fraud prevention and detection (Ryan & Gerry, 2011). The authors further state that a well-designed and effective internal control can help deter fraudulent activities. The governance reforms such as the Sarbanes-Oxley Act in the US, the Basel II Capital Accord and the revised Combined Code (2003) in the UK have required to reduce the risk of major corporate failures via tighter regulation of internal control systems (Woods, 2009). Ryan & Gerry (2011) argue that internal controls are not a

guarantee in which organisations will operate perfectly. Nevertheless, if local government perceives their internal control systems are effective, the level of intention to use forensic accounting services is expected to be low. However, if the strength of internal control system is weak, an alternative to use proactive measure such as employing forensic accounting services could counter the weakness (Muthusamy, 2011).

Thus, similar to a study by Muthusamy (2011), it is posited that;

H14: Perceptions of the strength of internal control will negatively influence the intention of English local authorities to use forensic accounting services

3.2.7 Control Variables

This section describes a group of factors that were classified as control variables. First, the types and size of local authorities are explained followed by the size of internal audit department and the existence of counter fraud team/unit.

3.2.7.1 Types and size of local authorities

Based on the previous studies on organisational adoption (Falkman & Tagesson, 2008; Teo et al., 2003), a number of additional factors that are potentially influencing the organisational intention will be included. In England, the district councils are the most (in number) compared to other types of councils. Different types of councils reflect different responsibilities or autonomy with regard to the services. For example, the unitary councils may have more activities than district or county councils. The number of activities may affect how the counter fraud is taking place. Local governments are responsible for deciding their own counter fraud

strategies (Lane, 2011). Thus, there can be considerable variation between local governments in relation to how fraud is addressed such as the size and the available resources (Fraud Advisory Panel, 2011). For the current research context, the intention to use forensic accounting may relate to the type and size of the local governments.

3.2.7.2 Size of internal audit department and the existence of counter fraud unit/team

The establishment of corporate anti-fraud teams in local government refers to the '*collocating or creating a single investigation/counter fraud service*' (National Fraud Authority, 2011, p. 15). Some local authorities have separate teams for different types of fraud investigation and some local authorities do not investigate all types of fraud. For example, the London borough councils which are unitary services had two main approaches of counter fraud: corporate teams responsible for all fraud, and separate teams responsible for internal fraud and housing benefit fraud (Lane, 2011). Another example is Birmingham City Council, that established two specialist teams known as the Benefit Counter Fraud Team (BCFT) dealing with housing and council tax benefit fraud, and the Corporate Fraud Team (CFT) dealing with internal fraud, corruption, and non-benefit fraud (Birmingham City Council, 2011).

In general, the responsibility for fraud risk management of local authority includes the anti-fraud team, section 151 officer (a statutory role), and the internal audit department (Fraud Advisory Panel, 2011). Central government takes a more proactive approach to counter fraud against the public purse by setting up a counter-fraud task force, and plans for a local government counter fraud strategy since 2010 (Fraud Advisory Panel, 2011). Other ways are developing a new local government counter-fraud strategy 'Fighting Fraud Locally' which outlines the need for a specialist team to tackle high risk frauds such as housing tenancy fraud,

and council tax exemptions. Another significant proposal of central government is to create a single integrated fraud investigation service with statutory power to investigate and sanction all benefit and tax credit offences (DWP, 2011). The service known as the SFIS is operationalised in 2014, combining resources from local governments, DWP, and HMRC (DWP, 2011).

However, there are some concerns about the impact to the individual local government's investigative capacity, especially to the small fraud team, which may affect their capacity to investigate the fraud, and *'the knock-on effect due to reductions in local policing numbers and the low priority typically given to fraud offences'* (Fraud Advisory Panel, 2011, p. 6). For the current research context, the varying structure, capabilities, and resources in the internal audit department, and/or anti-fraud team may associate to the intention to use forensic accounting.

3.3 Summary

The initial research model is developed in this chapter after considering the earlier studies. Each variable derived from institutional theory is described beside other important constructs to have a comprehensive research model. The background of each construct in the model is clarified within the conceptual model. Then, the model is supported by a number of hypotheses to demonstrate the relationship between the variables in the framework. The following chapter will justify the research methodology for this study.

CHAPTER 4: RESEARCH METHODOLOGY

This chapter describes the underlying research methodology that has been utilised and the procedures that have been carried out for data collection and data analysis. This chapter is organised as follows: it begins with the discussion related to the research philosophy and methodology applied in the present research. Then, the following sections outlined a description of the research design model including the participants in the present research, purpose and justification, research setting and time horizon, instrument design of the questionnaire and a brief of data analysis employed. The reasons for these choices are explained. Ethics and other issues are also discussed.

4.1 Research Methodology and Research Method

According to Saunders, Lewis, & Thornhill (2009), the term '*research methodology*' refers to the theory on how research should be conducted, including the assumptions on the theoretical, philosophical feature, and implications for the methods used in a particular study. The authors define the term '*research method*' as the techniques and procedures used to obtain and analyse research data. Simply put, methodology is concerned with several issues including: why one collected certain data, what data and from where the researcher collected the data, when and how the data is collected, and how it would be analysed (Hussey & Hussey, 2003). The theoretical perspective influences the choice of the research methodology and the ways in which the data will be used (deductive or inductive approach) (Gray, 2004). Grounded theory, experimental study, survey, and archival study are examples of research methodology. On the other hand, research method outlines the tools and techniques used to gather and compile empirical evidence to answer research questions or hypothesis (Bryman & Bell, 2011). For

instance, a structured interview, observation, and a self-completion questionnaire are specific instruments under the research method. The present research will use a survey as a research methodology and a self-completion questionnaire as a research method to reach the overall aim of the research. The justifications for the selection of survey methodology and the research methods are explained in detail in the following subsections.

4.2 Research Strategy and Design

According to Saunders et al. (2009), in selecting a research strategy, among the important issues that need to be considered are the nature of the perceived connections between theory and research implied by the research questions, as well as the dimensions of research philosophies such as epistemological, axiological, and ontological. The considerations are influential, as quantitative and qualitative research strategies differ greatly in each of these respects. For example, quantitative research takes a deductive approach in which research is used to test the theory, as opposed to the inductive approach in qualitative research, in which theory and a model are generated from data. The two strategies represent different epistemological positions. Quantitative research comes from a positivistic approach while qualitative research is associated with an interpretivist perspective (Saunders et al., 2009).

Bryman & Bell (2011) define positivism as *'an epistemological position that advocates the application of the methods of the natural sciences to study of social reality and beyond'* (p.15). Additionally, Myers (1997) states that positivists refer to who consider that reality is objectively given and explained by measurable properties, in which independent of the researcher and their instruments. Orlikowski & Baroudi (1991) posits a study can be categorised as positivist in the existence of formal propositions, measureable of variables,

hypothesis testing, and the inference from the sample to a stated population. The assumption under the positivist approach normally accept the existence of true answers. The process begins when the researcher develops the hypothesis relating to the investigation of the study in order to confirm the outcomes based on the data, or the researcher uses some hypotheses and analyses data for confirmation (Easterby-Smith, Thorpe, & Jackson, 2008).

On the other hand, interpretive studies focus on the understanding a phenomena or daily social roles through the meanings that people assign to those roles (Myers, 1997; Saunders et al., 2009). Interpretive researchers start out with the assumption that access to reality (given or socially constructed) is only through social constructions such as language, consciousness and shared meanings (Myers, 1997). According to Bryman & Bell (2011), interpretivism differed from positivism approach. For example, interpretivism refers to the strategy used to discover the differences between people and the objects of the natural sciences, which required the researchers to understand the meaning of social action. Hussey & Hussey (2003) outline the main differences between positivism and intepretivism philosophy, which involves the characteristics of quantitative and qualitative method as shown in Table 4-1.

Table 4-1: Positivism vs. Interpretivism

Positivism philosophy (Deductive)	Interpretivism philosophy (Inductive)
Tends to produce quantitative data	Tends to produce qualitative data
Uses large samples	Uses small samples
Concerned with hypothesis testing	Concerned with generating theories
Data is highly specific and precise	Data is rich and subjective
Generalises from sample to population	Generalises from one context to another

(Source: Hussey & Hussey, 2003)

Given the considerations of the difference between quantitative research under positivism philosophy and qualitative research under interpretivism philosophy, a quantitative research strategy was selected for the present research. The nature of the current research is to test the identified variables using a theory rather than emphasising to generate a theory. In addition, a positivist view is adopted in the current research based on its assumption of particular social reality, such as attitudes to detect and prevent fraud, and the intention to use forensic accounting services. The use of scientific method based on the facts and observation (quantitative in nature) is used to measure the social reality objectively. For example, quantitative strategy adopted in the questionnaires is always associated with positivist research (Henn, Weinstein, & Foard, 2006).

Furthermore, the deductive approach represents the positivism philosophy emphasis on the relationship between theory and research Bryman & Bell (2011). For example, under the quantitative method, the deductive approach is used by testing the theory. Based on the researcher knowledge in a particular domain and theoretical consideration, hypothesis will be developed followed by designing research strategy to test the hypothesis (Bryman & Bell, 2011; Saunders et al., 2009). Thus, the justifications to use positivism philosophy are outlined below:

- i. Generalisation: a survey-based research seeks to identify relationships that are common across organisations, which provide a general statement or theory about the phenomenon being researched (Bryman & Bell, 2011).
- ii. Saving in time and effort: adopting a cross-sectional survey methodology leads to saving time, effort and resources required compared to other methodologies such as experimental and longitudinal (Creswell, 2003)

- iii. Previous studies provide the basis for developing a model and research constructs to use (Carpenter & Feroz 2001; Teo et al. 2003).
- iv. The sample size used in the present research is considered large as suggested under the positivism paradigm (Hussey & Hussey, 2003).

The present study will undertake a cross-sectional approach in data collection. The objective is to collect quantitative data using a survey. The closed-ended type questions provide an understanding about what is happening towards the use of forensic accounting services such as, the extent, the level of intention, and the perception of the core skills and essential traits of forensic accounting. A survey is considered the most common method utilised in the field of business research compared to other techniques such as lab experiments and interviews (Ford & Richardson, 1994; Randal & Gibson, 1990). Additionally, previous studies within institutional theory (Teo et al., 2003; Henderson et al., 2011) employed a cross sectional approach. Hussey & Hussey (1997) stated that individual's perspective can be examined by utilising either questionnaire survey or interviews. The advantage of a questionnaire survey is that it enables a researcher to cover a wide range of area compared to the interview approach. Thus, the present research applied the elements based on institutional theory to frame part of the research methodology as discussed below.

The present research believed that a survey approach is appropriate to be used based on the following justifications. First, align with the research philosophy of positivism, and to achieve the research aims such as generalisation, identifying associations between research variables and carrying out multivariate variables, the survey method is considered appropriate (Bryman & Bell, 2011; Saunders et al., 2009). Second, the survey method has been widely used as a primary data collection in business research (Bryman & Bell, 2011; Saunders et al., 2009) and

institutional theory (e.g. Ashworth et al., 2007; Teo et al., 2003; Henderson et al., 2011). Third, a survey method is useful for the sample accessibility with respect to the number of respondents identified (Cooper & Schindler, 2011). Finally, due to constraints of time and resources available to the researcher, a survey is considered the best method to collect information needed within the current research context. The mail survey was used as it is the most effective way to collect data to reach a significant number of respondents across a wide area or large-scale quantitative research (Sekaran, 2003).

The research design of a study should also stem from the research question. According to Vaus (2001), the function of research design is *'to ensure that evidence obtained enables us to answer the initial question as unambiguously as possible'* (p. 9). The essential research design as suggested by Cooper and Schindler (2011) includes:

- i. The design is an activity and time-based plan
- ii. The design is always based on the research questions
- iii. The design is a framework for specifying the relationships among the study variables
- iv. The design outlines procedures for every research activity

In the present research, the research design will form the basis to conduct the research, the plan for the data collection, measurement and analysis. The research objectives and research questions that are addressed in the present research are related to the extent of using forensic accounting services, the factors that influence the intention to use the services, and the perceptions of local authorities' officers towards the core skills and essential traits of forensic accounting.

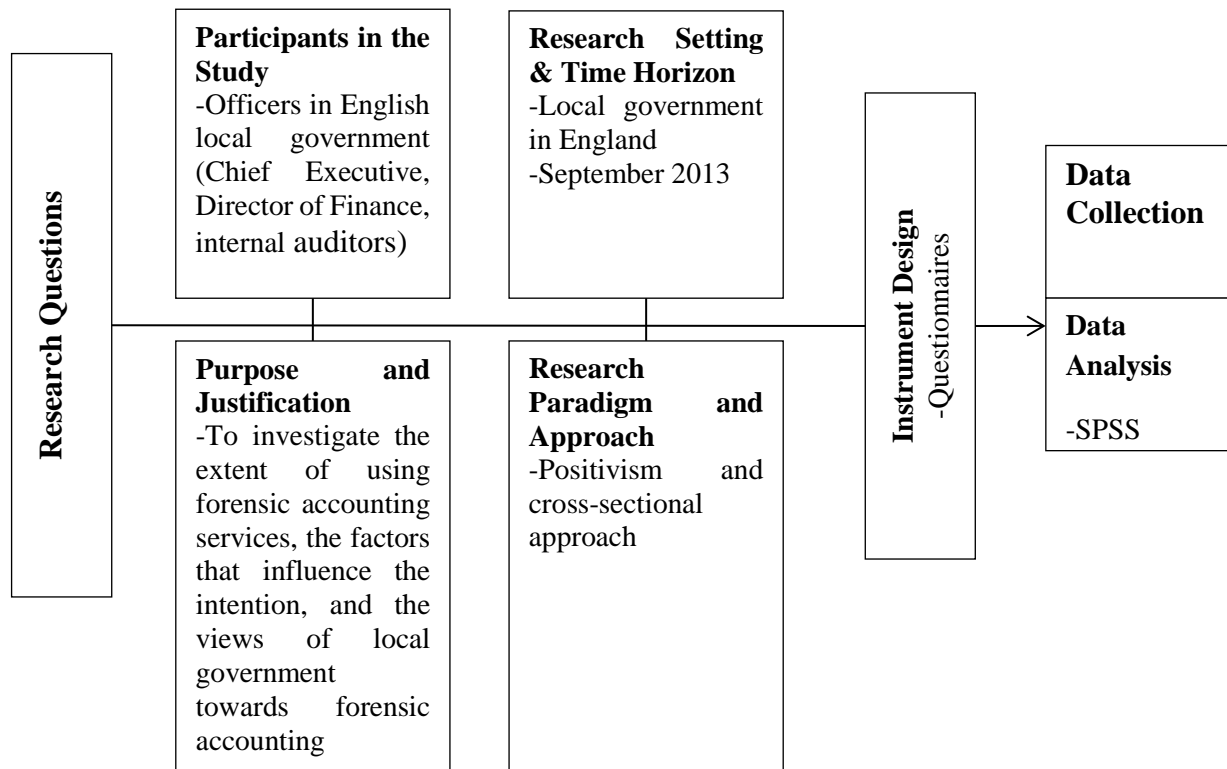
More specific research questions are outlined below:

1. To what extent do local authorities utilise the services from forensic accounting providers?
2. What types of forensic accounting services are used by English local authorities?
3. What types of forensic accounting services providers are used by English local authorities?
4. How satisfied are local authorities with the services received from forensic accounting services providers?
5. What is the level of intention to continue using the forensic accounting services?
6. How the core skills/essential traits of forensic accountants are perceived based on the perceptions of users or potential users of forensic accounting services?
7. Which factors have significant influence on the intention to use forensic accounting services?
8. How strongly the significance of factors influence the intention to use forensic accounting services?

4.3 Modelling the current research design

Figure 4-1 below outlines the current research related to research design. The design initiates by posing the research questions to be analysed, identifying the participants, setting of the study and the time horizon, purpose and justification of the research, and research paradigm and approach.

Figure 4-1: Research Design Model



(Source: Adapted from Cavana, Delahaye, & Sekaran, 2001)

4.3.1 Participants in the Present Research

The participants in the present research were local authority officers involved in the decision-making process, risk management, internal control including counter fraud activities.

4.3.1.1 Population and Sample Size

The population and sample size of the present research was senior officers in all 353 local authorities across England. Specifically, the three groups of participants are Chief Executive, Director of Finance, and internal auditors. The selected participants used in the present research

expected to gather views from three different roles. Additionally, they are believed to represent the major counter fraud activities within local authorities and could be expected to have a better understanding of the issues in their organisation. For example, the Chief Executives involved in daily operations, including decision-making, knew their organisational culture, and had a direct contact with the organisation's partner. Directors of Finance are responsible for the area of internal audit and risk management, while internal auditors are directly involved in counter fraud activities and arrangements. Internal auditors also may support decision-making processes such as giving recommendations on counter fraud arrangements for the top management. At the early stages, the present research tried to obtain names of the respondents wherever possible to be included in the survey. However, in order to ensure a good response rate, the remaining respondents without name were also included to participate in the survey.

4.3.1.2 Local Authorities in England

In total there are 353 local authorities in England (GOV.UK, 2012b). According to GOV.UK (2012b), local authorities in England operate under either a one tier system or a two tier system. Overall, there are five different types of local authorities in England: metropolitan boroughs (36), London boroughs (32), unitary authorities (125), county councils (27) and district councils (201). In addition to the 353 local authorities in England, there are some 10,000 parish and town councils, which were not included in the present research because of the complexity and diversity of the structure (Abu Hasan, Frecknall-Hughes, Heald, & Hodges, 2013; Worthy, Amos, Hazell, & Bourke, 2011). A parish may be represented by a parish council, a town council or community council which characterized as the most local level of government in England or known as the third tier of local government (DCLG, 2013a). The types of local authority indeed differ in each area and whilst there are no particular criteria to determine which

types in a particular area, the general pattern is that urban areas are more likely to be represented by single tier authorities whilst two tier authorities are more likely covered in rural areas (DCLG, 2013a). An important feature of local authorities from other local services providers is that most local authorities are elected and have the ability to collect tax locally (DCLG, 2014). Table 4-2 below summarised the responsibilities based on the types of local authorities.

Table 4-2: Responsibility areas based on types of local authorities

Services	Unitary	County	District	Metropolitan	London boroughs	Greater London Authority (GLA)
Education	x	x		x	x	
Highways	x	x		x	x	x
Transport and Planning	x	x		x	x	x
Passenger and Transport	x	x				x
Social Care	x	x		x	x	
Housing	x	x	x	x	x	
Libraries	x	x	x	x	x	
Leisure and Recreation	x		x	x	x	
Environmental Health	x		x	x	x	
Waste Collection	x		x	x	x	
Waste Disposal	x	x		x	x	
Planning Applications	x		x	x	x	
Strategic Planning	x	x		x	x	x
Local tax collection	x		x	x	x	

(Source: The Local Democracy Think Tank (LGiU), 2013)

4.3.1.3 Local Authorities under a One Tier System

i. **Metropolitan boroughs**

Metropolitan boroughs which are unitary authorities can be referred also as metropolitan district councils, metropolitan borough councils or metropolitan city councils. Metropolitan boroughs are responsible for services in education, highways, transport planning, passenger transport, social care, housing, libraries, leisure and recreation, environmental health, waste collection, waste disposal, planning applications, strategic planning and local tax collection.

ii. **London boroughs**

Each London borough is a unitary authority. London boroughs are responsible for education, highways, transport planning, social care, housing, leisure and recreation, environmental health, waste collection, waste disposal, planning applications, strategic planning, and local tax collection. Apart from that, some services are provided through '*joint authorities*' or share responsibility governed by the Greater London Authority (GLA). The GLA is responsible for providing services like fire, police and public transport.

iii. **Unitary authorities**

Many large towns and cities and some small counties are unitary authorities, e.g., city councils, borough councils, county councils, or district councils. Unitary authorities are responsible for education, highways, transport and planning, passenger transport, social care, housing, libraries, leisure and recreation, environmental health, waste collection, waste disposal, planning applications, strategic planning and local tax collection. In

some metropolitan areas, some services such as fire, police and public transport are provided through *'joint authorities'*.

4.3.1.4 Local Authorities under a Two Tier System

i. **County Councils**

County councils cover the whole of the county and provide the majority of public services in their particular area. They are responsible for education, highways, transport planning, passenger transport, social care, libraries, fire and safety, trading standards, waste disposal and strategic planning.

ii. **District councils**

Each county is divided into several districts; also, can be known as borough councils or city councils if the district has borough or city status. District councils cover a smaller area than county councils and provide more local services including housing, leisure and recreation, environmental health, waste collection, planning applications, and local tax collections.

4.3.1.5 Decision-making Process in Local Authorities

Under the Local Government Act 2000, local authorities in England are structured in three different ways:

- i. A leader and cabinet
- ii. An executive mayor and a cabinet
- iii. Older structure of committees (population below 85,000)

(Local Government Association, 2011)

The leader of a local authority, elected by the majority of the council, is responsible to set up the vision and direction of authorities. The cabinet member is an executive member appointed by the leader and is responsible for a particular portfolio. In some authorities, a mayor will be appointed directly supported by a cabinet. The executive is required to set out '*the forward plan*' consisting of all key decisions to be made by the executive that have to be made available to public, relevant party and scrutiny committees. The supreme body is the full council meeting in which all councillors may vote. For example, the decisions on approving the budget, setting up the policy framework, appointing chief officers, and making constitutional decisions. In other words, councillors, through decisions of the full council and the executive, set the overall policy of a local authority. On the other hand, senior officers, led by the Chief Executive and chief officers, are responsible for advising the cabinet and scrutiny committees on policy, implementing councillors' decisions and service performance, and giving unbiased professional advice (Local Government Association, 2011).

4.3.1.6 The Role of Chief Officers in Local Authorities used in this study

This section describes the role of senior officers as participants of the survey. The three groups of the chief officers are Chief Executive, Director of Finance and internal auditor.

4.3.1.6.1 Chief Executive

The Chief Executive is the head of the paid services that is responsible to oversee the overall performance of local authorities. Specifically, the three main functions of Chief Executive are to advice councillors regarding the policy and other matters, lead the management of the organisation to ensure implementation of policies agreed by councillors, and act as executive

decision-making based on the authority given by councillors (Harbour & Wilson, 2003). The present study conducted a simple survey in some local authorities' websites that provides additional information on the role of Chief Executive. For example, the operational management tasks involved overseeing financial and performance management, risk management, and people management besides managing the local government on a day-to-day basis.

4.3.1.6.2 Director of Finance

The Director of Finance in local authorities known as Chief Financial Officer (CFO) is appointed under Section 151. The responsibility of financial officer governed by the Local Government Act 1972 required every local authority in England to '*...make arrangements for the proper administration of financial affairs and shall secure that one of their officers has responsibility for the administration of those affairs*' (CIPFA, 2010b, p. 3). Example of the main responsibility of financial officer is to support the effective governance of the authority through development of:

- i. corporate governance arrangements, risk management and reporting framework; and
- ii. corporate decision making arrangements

(CIPFA, 2010, p. 7)

4.3.1.6.3 Internal Auditor

Internal audit in English local authorities exists originally under section 151 of the Local Government Act 1972 and subsequently the Accounts and Audit (England) Regulations 2011. The act and regulations required local authorities to "*make arrangements for the proper*

administration of their financial affairs” and to “maintain an adequate and effective internal audit of its accounting records and of its system of internal control in accordance with the proper practices in relation to internal control” (CIPFA, 2013). Internal audit plays an important role in advising the councils and working with management to improve systems to achieve the objectives.

The appointment of internal auditors in English local authorities can be in the forms of:

- i. appointing a local individual or a member of a panel of individuals administered by a County Association of Local Councils or Branch of the Society of Local Councils Clerks.
- ii. employing a competent internal auditor with sufficient organisational
- iii. independence and status to undertake
- iv. purchasing an internal audit service from the principal authority
- v. purchasing internal audit service from a local firm or specialist internal audit practice

(Joint Practitioners’ Advisory Group (JPAG), 2010)

4.3.1.7 Gathering Information of Respondents

In order to identify and collect the details of the participants in the present research, the official website of the UK government, GOV.UK (2012b) was visited. The full list of local authorities is shown in Appendix 4. Based on the list, local authorities were identified in order to gather personal details from their website. For example, the names, job roles, office address and email address were identified from the web pages. The detailed information of respondents was available in the ‘*About the Council*’ web page besides information on the management structure. However, it was found that not all local authorities publicly disclosed the contact

details of the types of respondents. Therefore, an email addressed to customer services asking for the details of their respective Chief Executive, Director of Finance and internal auditors was sent. In total 50 emails were sent to local authorities and 40 local authorities responded by giving the details of respondents. Then, the details were incorporated to Microsoft Excel as a mailing list database including the 10 local authorities that did not respond for record purposes. Some of the difficulties in gathering information of the participants are described below:

- i. Some local authorities do not provide full details of each potential respondent on their website. For example, most information is available for Chief Executive but not for Director of Finance and internal auditors.
- ii. At the point of gathering the information, the appointment of Chief Executive in some local authorities was not finalised yet. Therefore, Assistant Chief Executive acting as Chief Executive was used.
- iii. There are some local authorities that shared a senior management team or joint management, such as Adur District with Worthing Borough Council. By right, this will reduce the number of respondents like Chief Executive and Director of Finance. However, it was decided to send the survey to each of the local authorities.
- iv. In some local authorities, the arrangement of internal audit is through shared or joint services or partnership with other authorities. For example, Hertfordshire County Council led the partnership of Shared Internal Audit Services (SIAS) with another four districts/borough councils. Thus, the number of internal auditors is less than it should be. To counter the problem, the current research sent the survey to each of the local authorities regardless of the arrangement of their internal audit services.
- v. Some local authorities outsourced the internal audit services, such as North Yorkshire District Councils that used a firm named Veritau. In this case, the questionnaire was sent directly to the provider and to the respective local authorities.

Table 4-3 shows the total number of contacts by type of local authorities (with their name and total) according to their positions that participated in the survey.

Table 4-3: Total Number of Contacts

Types of Local Authorities	Chief Executive		Director of Finance/ S 151		Internal Auditor		Total
	Named	Unnamed	Named	Unnamed	Named	Unnamed	
English County Council	20	7	16	11	8	19	81
Metropolitan Borough Council	26	10	20	16	11	25	108
English Unitary Council	40	16	36	20	10	46	168
London Borough Council	28	5	24	9	13	20	99
English District Council	160	41	130	71	77	124	603
Total	274	79	226	127	119	234	1,059

From Table 4-3, the Chief Executive is the highest targeted by name at 274, followed by Director of Finance/ Section 151 officers with 226, and internal auditors is the least with 119. For those without a name, the questionnaire was sent based on their job title to their respective office addresses. During the observation of the websites and after receiving feedback from the customer services of local authorities, 22 respondents with email address were selected as a web based survey. The reason is due to their preferences to be contacted. Based on the email of the respondents, an email invitation was sent to each respondent. In total, 1,037 questionnaires were sent through mail and the remaining used web based survey (Bristol online survey).

4.3.2 Purpose and Justification

This study examined the extent of using forensic accounting services to detect and prevent fraud within local government in England. The extent of using forensic accounting services is

expected to be impacted upon by several factors, such as institutional factors, internal control factors, fraud perception factors, and forensic perception factors. Additionally, the views of forensic accounting from the local government officers' perspective will be examined. The present research attempts to fill gaps, as there is very little published research in using forensic accounting services to detect and prevent fraud specifically in local authorities' context.

4.3.3 Questionnaire Design

The design of questionnaire provides a framework for the data collection and analysis (Bryman & Bell, 2011). Using the questionnaire is considered the most common data collection instrument in business research (Cooper & Schindler, 2011). There are two main objectives in designing a questionnaire: to maximise the proportion of subjects answering the questionnaire (response rate) and to obtain accurate relevant information in a survey (Leung, 2001). Consideration was given to increase the response rate, including how to administer the questionnaire, state the purpose of the survey, appropriate length of the questionnaire, and send a reminder for the non-response respondents. To get relevant information, the researcher carefully considered the way such questions were asked, the order of the questions, and the general layout of the questionnaire.

Literature related to institutional variables in the public sector, fraud and forensic accounting were used as guidance in designing the questionnaire. The design of the questionnaire of the current research adopted several sources of data, including previous instruments developed by other researchers and the research framework developed from the relevant literature. Several types of closed-ended questions are employed in the present research. Saunders et al. (2009) recommended five types of closed questions: a) list questions, which offer the participants a

list answer to choose from; b) category questions, which participants can answer in only one category; c) ranking questions, which ask participants to place things in order; d) rating questions, which are used to obtain participants' opinions (Likert-scale); and e) quantity questions, in which the participants are required to provide a number, giving the amount of features on behaviour or attribute. Closed-ended questions were used as they give respondents' specific limited-alternative responses and require them to choose the one closest to their own viewpoints, in contrast to open-ended questions which require respondents to answer in their own words (Zikmund, Babin, Carr, & Griffin, 2010).

All five types of closed questions are used to achieve the aims of the current research. Firstly, most of the questions adopted are the rating question in the form of Likert-type scale. Easterby-Smith et al. (2008) stated that the rating question is easy and quick to answer, does not need much space, and enables a variety of statistical techniques. Adopting a five-point scale is considered appropriate compared to five or nine points as it does not improve the reliability of the ratings (Sekaran, 2003). The extent of using forensic accounting services and factors influencing local authorities' intention to use forensic accounting services used a five-point numerical scale from 1= strongly disagree to 5= strongly agree within the Section 3, Section 4, Section 5, Section 6. Others, a five-point numerical scale used are 1= very dissatisfied to 5= very satisfied in question 2.3 (b) of Section 2, 1 = no intent to use to 5 = definite intent to use in question 7.1 of Section 7, and 1= less than 6 months to 5 = more than 24 months in question 7.2, 7.3 and 7.4 of Section 7.

Secondly, the category type question is used in Section 1 and Section 8 for the profile information or demographic questions. Thirdly, question 2.1 in Section 2 used ranking type question. Fourthly, questions 2.3 (a) in Section 2 used the list type of question. Finally, the

quantity type question is related to question 1.3 of Section 1. At the end of the questionnaire, an open-ended question is provided for the respondents to express their own views or opinion. The questionnaire also states whether the respondents are willing to be interviewed and to receive a summary of the report findings. The objectives of having a short interview were to engage the participants more to allow for sharing further in-depth responses compared to the closed-ended questions (Zikmund et al., 2010). However, due to a low response rate, constraints of time and costs, interviews were not conducted in the current research. Finally, respondents had opportunity to provide comments or information related to the utilisation of forensic accounting services in their organisations.

4.3.3.1 Sections of Questionnaire

Table 4-4 summarised the category of sections in the questionnaire with the total number of questions used.

Table 4-4: Sections in the Questionnaire

Section	Title	Number of Questions
1	Local Government Characteristics	6
2	Forensic Accounting Services	6
3	Forensic Accounting Perception Factors	12
4	Fraud Perception Factors	8
5	Internal Control Factors	11
6	Coercive Pressures	12
7	Mimetic Pressures	2
8	Normative Pressures	16
9	Internal Control Factors	11
10	Intention to Use Forensic Accounting Services	2
11	Personal Profile	4
12	Others (Descriptive)	15
Total		105

4.3.3.2 Categories and variables in questionnaire

Throughout designing the instrument, identified variables were classified into six categories: characteristics of local government, the extent of using forensic accounting services, factors that influence the intention to use forensic accounting services, understanding the characteristics of forensic accounting, the level of intention to use forensic accounting services, and profile of respondents. Additionally, the questions seeking to understand who is answering, what the local authority does or intends to do and what factors could influence their decision to use forensic accounting services in their organisations. As shown in Table 4-5, the first category focuses on the characteristics of local authorities such as the types, size, and political majority.

The objective of collecting this information is to analyse against the extent of using forensic accounting services and considered as control variables. The second category examined the views towards the core skills and essential traits posed by a forensic accountant. The items are adopted from Davis et al. (2010), Muthusamy (2011) and Rezaee et al. (2004). The third category aimed to examine the extent of using forensic accounting services. Initially, the respondents will be asked if their local authorities already use the forensic accounting services. If the answer is yes, the respondents will continue to answer on the types of services used, and types of forensic accounting services providers.

The fourth category lists the factors/reasons believed to influence local government to use forensic accounting services to detect and prevent fraud. These factors are institutional factors (Ashworth et al., 2007; Carpenter & Feroz, 2001; Teo et al., 2003), forensic accounting perception factors (Apostolou & Crumbley, 2008; Muthusamy, 2011; Ramaswamy, 2005),

fraud perception factors (Gee et al., 2012; Muthusamy, 2011; National Fraud Authority, 2012a) and control factors (Henderson et al., 2011; Teo et al., 2003). The fifth category asked the level of intention to use forensic accounting services (Muthusamy, 2011). Finally, the six category describes demographic information about the respondents (job title, age group, academic qualification, and professional membership).

Table 4-5: Categories and Variables in the Questionnaire

Category	Variables identified in a questionnaire
1. Characteristics of local authorities	Type of local authority Political majority Internal audit arrangement and number of staff Annual net revenue A dedicated counter fraud team/unit Number of staff in counter fraud team/unit
2. Understanding the characteristics of forensic accounting	Core skills and essential traits of forensic accountants
3. The extent of using forensic accounting services	The forensic accounting services utilisation Types of forensic accounting services used, the providers, satisfaction and intention to use in future
4. Factors that influence the intention to use forensic accounting services and others	Forensic accounting perception factors of perceived benefit, perceived risk, and costs to acquire the services Fraud perception factors of perceived severity and perceived susceptibility of fraud Internal control factors of Audit Committee and strength of internal control system Coercive pressures of central government, Audit Commission, and media, mimetic pressures of the extent of using forensic accounting services among local authorities and perceived success of using forensic accounting services by other local authorities and normative pressures of professional bodies and associations, forensic accounting services providers, and stakeholders
5. Intention to use	Level of intention to use
6. Profile of respondents	Job title Age Academic qualifications Professional membership

4.3.3.3 Construct, Measurement, and Research Question to the Questionnaire

The Table 4-6 lists the groups of factors, constructs, measures, number of questions in the questionnaire, research questions, and item coding for data analysis.

Table 4-6: Summary of Questionnaire Description

Construct	Statements	Total Number of Items	Items in Questionnaire	Research Questions	Item Code
Coercive Pressures					
1. Central Government and related agencies	Directive, rules and policies of central government Initiatives and action plan by central government Report on fraud issued by government bodies: the NFA and the DWP	4	6.1 6.2 6.3 (ii and iii)	RQ 5 & RQ 6	CGT1 CGT2 CGT3 CGT4
2. Audit Commission	Report on fraud issued by the Audit Commission Recommendations by the external auditors Recommendations by the Audit Commission	3	6.3 (i) 6.9 6.11		ACM1 ACM3 ACM2
3. Media	News, publications and discussion on from television, radio, newspapers, magazines, online news, and online social networking	5	6.13 (i-v)		MDN1 MDN2 MDN3 MDN4 MDN5
Mimetic Pressures					
4. Other local authorities	Used to detect and prevent fraud The rate of success received	2	6.4 6.5	RQ 5 & RQ 6	LAM1 LAM2
Normative Pressures					
5. Professional bodies and associations	Recommendations by the CIPFA, the ICAEW, and the ICFS Recommendations by employees that hold professional membership Recommendations by the Local Government Association (LGA) Recommendations by the Society of Local Authority Chief Executives (SOLACE) Recommendations by the Public Risk Management Association (Alarm) Recommendations by the Local Authority Investigation Officers Group (LAIOG)	8	6.6 (i-iii) 6.12 6.7 (i-iv)	RQ 5 & RQ 6	NBP1 NPB2 NBP3 NBP4 ASC1 ASC2 ASC3 ASC4

Construct	Statements	Total Number of Items	Items in Questionnaire	Research Questions	Item Code
6. Forensic accounting services providers	The presence of forensic accounting market Perception is positive The promotion of forensic accounting services	3	3.18 3.19 3.16		FSB1 FSB2 FSB3
7. Stakeholders	Pressures from elected councillors, taxpayers/local residents/voters, top management, business partners	5	6.8 (i-v)		SHT1 SHT2 SHT3 SHT4 SHT5
Internal Control Factors					
8. Audit Committee	Oversees risk management, governance and counter fraud arrangements Significant number of independent members At least a member is a financial expert Regular meeting with internal auditors Recommend to use forensic accounting	5	5.3 5.4 5.5 5.6 5.7	RQ 5 & RQ 6	ACT1 ACT2 ACT3 ACT4 ACT5
9. Strength of Internal Control Factors	Organisational structure supports effective internal control Management and employees are assigned appropriate levels of authority and responsibilities Effective and up-to-date counter fraud strategy Adequate resources to counter fraud Specialized professional training and accreditation Effectiveness of in-house fraud investigation is very high	6	5.1 5.2 5.8 5.9 5.10 5.11		ICO1 ICO2 ICO3 ICO4 ICO5 ICO6
Fraud Perception Factors					
10. Perceived severity	Financial loss Bad reputation/image Low employee morale Reduce efficiency and productivity Higher cost of fraud investigation	5	4.1 (i-v)	RQ 5 & RQ 6	SVF1 SVF2 SVF3 SVF4 SVF5
11. Perceived susceptibility	Often worries being a victim of fraud Probability being a victim of fraud is lower		4.2 4.3		PSF1 PSF2

Construct	Statements	Total Number of Items	Items in Questionnaire	Research Questions	Item Code
	Risk of fraud is lower compared to other local authorities	3	4.4		PSF3
Forensic accounting Perception Factors					
12. Perceived benefits	Helps to deter fraud Enhance the image Recovery of cash and assets More objectivity and credibility than internal auditors Expertise and knowledge Improve internal control system	6	3.1 3.2 3.3 3.4 3.5 3.6	RQ 5 & RQ 6	BFT1 BFT2 BFT3 BFT4 BFT5 BFT6
13. Perceived risks	Confidentiality issues Cannot guarantee Difficult to evaluate the effectiveness	3	3.7 3.11 3.12	RQ 5 & RQ 6	RIS1 RIS2 RIS3
14. Costs to acquire the services	Very costly The cost of using would influence decision to use Cannot afford the cost of acquiring	3	3.8 3.9 3.10	RQ 5 & RQ 6	COF1 COF2 COF3
Intention to use Forensic Accounting Services					
15. Intention to use	Intends to use for fraud detection and prevention How soon it will operationally implement?	2	7.1 7.2	RQ 5 & RQ 6	INT1 INT2
Control Factors					
16. Types	Type of local authorities	1	1.1	RQ 5 & RQ 6	T_NameAuthorities
17. Size of local authorities	Total annual expenditure	1	1.4		LAS
18. Size of internal audit/counter fraud	Size of internal audit/anti-fraud team (Number of staff)	4	1.3,1.5,1.6		IAT and CFR
Others					
19. Extent of use	‘Yes’ or ‘No’	1	2.2	RQ 1(a)	
19. Types of services	List of services	1	2.3(a)	RQ 1(b)	
20. Intention to use in future	Decrease Decrease Slightly Increase Slightly	1	2.3 (c)	RQ 3(b)	

Construct	Statements	Total Number of Items	Items in Questionnaire	Research Questions	Item Code
	Increase Significantly				N/A
21. Services’ providers and satisfaction level	Big Accounting Firms	1	2.3(b)	RQ 2	
	Others				
	Very Dissatisfied				
	Dissatisfied	1		RQ 3(a)	
	Uncertain				
	Satisfied				
	Very Satisfied				
22. Understanding towards forensic accounting	List of core skills and essential traits	1	2.1	RQ 4	
23. Political majority	Political party	1	1.2	N/A	
24. Awareness of forensic accounting services	Aware of the role of forensic accounting services in fraud detection and prevention	4	3.13		
	Knowledgeable about the benefits of using forensic accounting services		3.14		
	Knowledgeable about the risks of using forensic accounting services		3.15		
	Perception of forensic accounting services is positive		3.19		
25. Perceptions towards the Government actions related to fraud	The creation of the SFIS provides benefits to counter fraud activities in my local authority	5	4.5		
	The abolishment of the Audit Commission has had a negative impact on counter fraud activities in my local authority		4.7		
	A standard definition of fraud that can be used by all local authorities needs to be developed to establish a more reliable picture of fraud and to make an appropriate allocation of counter fraud resources in my local authority		4.9		
			4.11		

Construct	Statements	Total Number of Items	Items in Questionnaire	Research Questions	Item Code
	<p>The austerity measures introduced by central government have had a negative impact on the resources available for counter fraud activities in my local authority</p> <p>Lack of counter fraud standards at national level affects my local authority to detect and prevent fraud</p>		4.12		
26. Fraud within local authorities	<p>A fraud awareness campaign is an important tool to prevent and deter fraud in my local authority</p> <p>My local authority shares data and fraud intelligence with other local authorities</p> <p>Other local bodies such as the NHS and the DWP that are considered effective in how they tackle fraud led my local authority to use forensic accounting services</p> <p>It is difficult to estimate the total economic cost of fraud in my local authority</p> <p>My local authority is able to retain (or recruit) people with the necessary skills</p> <p>My local authority evaluates the strength of anti-fraud cultures regularly</p>	6	<p>4.8</p> <p>4.6</p> <p>4.10</p> <p>5.12</p> <p>5.13</p> <p>5.14</p>	N/A	N/A

4.4 Construct Reliability, and Validity of the Instrument

An assessment of the reliability of the constructs and the validity of the instrument was conducted to establish the reliability and validity of the instrument. Good measurement is fundamental for a quantitative research (Bryman & Bell, 2011). For example, in measuring the construct, testing and assessment procedures must be reliable and valid. According to Bryman & Bell (2011), validity and reliability are different in relation to the evaluation of measures of concepts. Reliability is only a necessary condition but insufficient condition for validity. To obtain validity, the measurement needs to be reliable, but reliability in itself is not enough to ensure validity. In other words, an instrument can be reliable without being valid. Reliability refers to the questions whether the outcomes of a research are repeatable. The reliability of an instrument is also concerned with the consistency or stability of test/measure scores. In statistical terms, reliability is determined by correlation coefficients. For example, when using a Likert-scale questionnaire, internal reliability can be measured using Rasch Item Response Theory and Cronbach's alpha (Bryman & Bell, 2011).

According to Cooper & Schindler (2011), two major forms of validity are internal and external validity. Internal validity refers to the fact that the instrument actually measures what it claims to measure, while external validity refers to the ability of research findings to be generalised across setting and time. The validity of a research refers to the accuracy of the inferences, interpretations or actions made based on quantitative data. The term '*validity*' in quantitative research is classified into various types such as construct validity, content validity, and criterion-related validity. For example, the content validity can be measured by the expert judgment in the field (Kimberlin & Winterstein, 2008). In order to ensure validity of the

instruments, the current research carried out pre-testing and empirical pilot study to measure reliability.

4.4.1 Pre-testing

To identify any remaining issues with the test instrument, pre-testing was carried out. The aim of the pre-testing is to identify whether there were any ambiguous or unanswerable questions, to identify whether the wording of both questionnaire instructions and questions (Oppenheim, 1992) or layout could be improved, and whether the meaning the researcher believed is associated with a question was how others perceived it. A draft of the questionnaire was given to academicians, and postgraduate students in the University of Huddersfield. The academicians include a group of lecturers and professors in the Department of Accountancy and Finance and a lecturer with vast experiences in local authorities' environment in the role of finance director.

Comments and suggestions from the academicians and fellow postgraduate students were used to revise the instrument in term of presentation, readability, validity, grammar, and to reduce the number of items. It also validated the estimated time required as fair and that the questions were suitable for the intended participants.

The appropriate changes and refinement of the instruments are considered including:

- i. Refining some of the questions to increase clarity and remove ambiguities
- ii. Reducing items that are redundant to achieve conciseness and precision
- iii. Adjustment to some of the measurement scales
- iv. Changes to the cover page of the questionnaire

4.4.2 Empirical Pilot Study

According to van Teijlingen & Hundley (1998), the term '*pilot study*' refers to mini versions of a full-scale study (also called feasibility studies), as well as the specific pre-testing of a particular instrument such as a questionnaire or interview schedule. The pilot study should be undertaken on the population from which the sample is drawn. Some of the advantages of conducting a pilot study included developing and testing adequacy of research instruments, assessing the feasibility of a full scale study/survey, and collecting preliminary data (van Teijlingen & Hundley, 1998). According to Billingham, Whitehead, & Julious (2013), there is little published guidance to determine the sample size required for a pilot study. However, the authors stated that a sample size justification should give a minimum number of participants needed in order to meet the objectives of the pilot study. On the other hand, Hertzog (2008) states that general guidelines to determine the sample size is 10% of the final study size.

4.4.2.1 Results of Pilot Study

Overall, 50 respondents of Chief Executive (20), Director of Finance (18), and Head of Internal Auditor (12) in Yorkshire and the Humber, and North West England County were selected based on the convenience sampling method. The chosen respondents for the pilot study represented 4.7% of the overall sample size of the present research. The questionnaire was mailed in April 2014, including a cover letter stating the aim of the research, time to complete the questionnaire, and expected date to return the questionnaire. The respondents '*were encouraged to give feedback and comments on the comprehensibility and complexity of the items and instructions in the survey*' (Muthusamy, 2011, p. 137) such as the length of times, and the number of questions.

A total of 12 questionnaires was returned after a period of 3 weeks. The responses received consisted of 8 internal auditors and 4 financial directors. None of the chief executives returned the questionnaire. The data analysis of the pilot study included a reliability test, descriptive analysis and reviewing feedback from the respondents. To evaluate the reliability of a multi-item measurement scale, the Cronbach's alpha was used, with 0.7 as a cut-off point. (Hair, Black, Babin, & Anderson, 2009). However, in the initial stages of research, Nunnally (1978) suggested that a coefficient of 0.50 or 0.60 is good enough. Descriptive analysis was carried out to determine the common misunderstanding or any items not answered (Verma & Mallick, 1999). Most of the respondents stated that the time allocated to complete the questionnaire was sufficient for them to answer all the questions.

The demographic of the pilot study samples are outlined in Table 4-7 based on the current position of the respondents, types of local authority, political majority, the current provision of internal audit services, net revenue, existence of in-house counter fraud team/unit, and utilisation of forensic accounting services. The analysis showed that the data for type of local authority, political majority, the current provision of the internal audit services, existence of in-house counter fraud team/unit, and utilisation of forensic accounting services are almost equally distributed.

Table 4-7: Demographic analysis of pilot study

Profile		Frequency
Current position/Job title	Chief Executive	0
	Director of Finance	4
	Head of Internal Auditor	8
	Total	12
Type of Local Authority	English County Council	1
	Metropolitan Borough Council	4
	English Unitary Council	2
	English District Council	5
	Total	12
Political Majority	Conservative	5
	Labour	4
	Liberal Democrat	0
	Independent Group	0
	Other/ Hung	3
	Total	12
Current provision of internal audit	Maintained in-house	9
	Fully outsourced	1
	Joint/shared services	1
	Partially outsourced	1
	No internal audit function	0
	Total	12
Net Revenue	Less than £100 million	5
	£101 million - £400 million	6
	£401 million - £700 million	1
	£701 million - £1,000 million	0
	£1,001 million - £1,300 million	0
	£1,301 million - £1,600 million	0
	£1,601 million - £1,900 million	0
	More than £1,900 million	0
	Total	12
In-house counter fraud team/unit	Has an in-house counter fraud	10
	No in-house counter fraud	2
	Total	12
Utilisation of forensic accounting	Currently using or had used	2
	Not using	10
	Total	12

The reliability test involved items from the factors that influence the decision to use forensic accounting services as shown in Table 4-8. All other items and demographic variables were excluded. The results indicated that the highest coefficient (Cronbach's alpha) was 0.993 and the lowest was 0.555. Two variables had Cronbach's alpha above 0.90 (media and associations), five variables between 0.80 and 0.90 (central government, other local authorities, professional bodies, perceived benefits of forensic accounting and intention to use forensic accounting

services), four variables between 0.70 and 0.80 (stakeholders, transaction costs, perceived severity and strength of internal control), three variables between 0.60 and 0.70 (Audit Commission, perceived risks and perceived susceptibility) and only one below 0.60 (Audit Committee). According to Hair et al. (2009), the coefficient of 0.7 should be used as a cut-off point as a standard measure of reliability. However, in the initial stages of a research, a coefficient of 0.50 or 0.60 is acceptable (Nunnally, 1978). The acceptable value of Cronbach's alpha for all variables implied that they were internally consistent and measuring the same content universe (Sekaran, 2003).

Table 4-8: Reliability analysis of pilot study

Constructs	Cronbach's Alpha	No. of Items
Coercive pressures		
Central government	0.819	4
Audit Commission	0.622	3
Media	0.993	5
Mimetic pressures		
Other Local Authorities	0.814	2
Normative pressures		
Professional bodies	0.803	3
Associations	0.901	4
Stakeholders	0.704	4
Forensic accounting perception factors		
Perceived benefits of forensic accounting	0.871	7
Perceived risks	0.624	4
Costs to acquire the services	0.716	2
Fraud perception factors		
Perceived susceptibility	0.626	5
Perceived severity	0.705	3
Internal Control		
Strength of Internal control	0.719	6
Audit Committee	0.550	5
Intention to use forensic accounting services	0.820	2

To recapitulate, as the results and analysis process of the pilot study were considered acceptable, it was suggested that the survey instrument did not require any modification and was appropriate for the final survey. It is worth mentioning that while a high value for Cronbach's alpha indicates

good internal consistency of the items in the scale, it does not mean that the scale is unidimensional (Gliem & Gliem, 2003). For example, factor analysis can be used to determine the dimensionality of a scale. The present research did not analyse the dimensionality of a scale for the pilot study due to the insufficient number of responses. However, the analysis of the final survey employed factor analysis, both exploratory factor analysis and confirmatory factor analysis.

4.5 Rules Ethic and Confidentiality

Before conducting the questionnaire survey, the approval of the Ethics Committee of the University of Huddersfield was obtained to preserve the rights, liberties and safety of the participants. In addition, an information sheet, including the name of the University of Huddersfield and the name of the school, were prepared to explain the purpose of the study and the ethical rules and given to each participant, attached to the questionnaires. The participants were informed that under the ethical rules, they were participating voluntarily and no risks, such as psychological, moral, legal or other risks, would occur with them. It advised the respondent to refer to any queries or complaints they may have about the way the study is conducted to the appropriate officer of the University of Huddersfield Research Ethics Committee. A telephone number and email contact were provided in the cover letter to that effect.

As for the confidentiality and security of the questionnaire received, all the hardcopies of the questionnaire (including printed version from a web-based survey) were stored in the locked cabinet in the postgraduate office of the Business School which only the researcher and supervisor had access to look and to review. Similarly, after data had been keyed in and

analysed into the computer, a protected password was used to ensure that only the researcher had access to it.

4.6 Data Collection

A self-administered survey-based research is adopted as a primary method in the current research by utilising a mail and an electronic survey. The current research decided to use both mail and electronic survey to provide a fruitful and cost effective research methodology (Enticott, 2003). For example, Enticott (2003) compared response rates and preferences from three different survey methods, which are internet, email, and mail among local authorities officers in the UK. The results show that electronic based surveys demonstrated to be effective research tools. Overall, the officers in local authorities preferred to use an email survey, followed by an online survey, and lastly by post. Ashworth et al. (2007) also used the same approach in their study related to institutional pressures in the UK local authorities. In addition, the authors mention that an electronic survey is useful when the aim of the research is to examine the attributes of a large number of organisations and to perform a comprehensive field-level test of isomorphism. Thus, the present research believes that by employing both mail and electronic survey, the respondents have the options to give their responses. One of the advantages of mail survey method is that respondents have time to review the questions and respond within their own time with little pressure. In this way it was hoped more thoughtful responses would be made.

4.6.1 Final Survey

The population of the current research consists of all local authorities in England; 353 entities. The present research used all the 353 local authorities as a sample size chosen consisting of 1,059 senior officers, namely, Chief Executive, Director of Finance, and internal auditor. Based on the contact details (those with name) and the job titles (as shown in Table 4-3), an invitation letter was sent to each respondent. The respondents were assured of confidentiality concerning their personal and organisational information. Neither local authority's name nor identification of individuals was included in the survey. For an online survey, an invitation letter was sent to their respective email address indicating information in the same way as conducting the mail survey with additional information on the website address of the Bristol online survey page.

The survey packages included a cover letter stating the invitation to participate in the survey (Appendix 5), a postage-paid return envelope, and a copy of the questionnaire (Appendix 6). The cover letter explained the objectives of the study, a guarantee of the confidentiality of the respondent, and estimate of time to be completed and the expected date for the respondents to return the completed questionnaire. It also stated appreciation to respondents for their time and effort in completing the survey. The cover letter used the University of Huddersfield letterhead. It included the name and contact information of the researcher and primary supervisor. Additionally, a definition of forensic accounting services and fraud were included in the questionnaire to improve the validity of the responses. Given the various definitions of forensic accounting and fraud in the literature, the current study narrowed down those definitions based on prevention and detection of fraud techniques by external party, and fraud within the context of English local authorities as defined by Audit Commission (2011) discussed in Section 2.1.2 and 2.2.1, respectively.

In total 1,037 of a mail survey was sent to the respective respondents with an online survey used to the remaining 22 respondents as was their preference established during gathering personal details (as discussed in the Section 4.3.1). The mail survey was used as it is the most effective way to collect data to reach a significant number of respondents across a wide area or large-scale quantitative research (Sekaran, 2003). Thus, the online survey was employed to increase the size of the sample and to minimise costs (Muthusamy, 2011). The demographic of the sampling both mail survey and an online survey is detailed in Table 4-9 below.

Table 4-9: Demographic of distributing questionnaires

Types of Local Authorities	Mail Survey	Online Survey	Total Sample Size
English County Council	79	2	81
Metropolitan Borough Council	102	6	108
English Unitary Council	166	2	168
London Borough Council	95	4	99
English District Council	595	8	603
Total	1,037	22	1,059

The final survey was conducted between June and November 2014. Personalised contact details and emails were used to increase the response rate apart from unnamed participants. The first stage of distributing the questionnaire, both mail survey and an online survey, started on 26 June 2014. Two stage reminder letters followed after the period of three weeks and September as detailed in Table 4-10. The reminder served as both a thank you to those who had responded and as a gentle reminder for those who had not.

Table 4-10: Mailing Pattern

Mailing Pattern	Mailing Date	
	Named	Unnamed
First stage	26 June 2014	24 October 2014
Reminder 1	18 July 2014	17 November 2014
Reminder 2	17 September 2014	30 November 2014

The distribution of the questionnaire to the unnamed respondents was carried out on 24 October 2014 followed by a reminder on 17 November 2014 and final reminder after two weeks. According to Dillman, (2007), multiple reminders to respondents were carried out as a way to improve postal survey response rates and for lead-time as recommended by Evans, Ritchie, Tran-Nam & Walpole (1996).

4.6.2 Response rate

In total, out of 1,059 distributed questionnaires, 143 were returned (excluding one respondent who stated they were unable to participate), yielding a response rate of 13.5% as depicted in Table 4-11. As suggested by Schirmer (2009), it is common for response rates for a postal survey to be as low as 10% to 15%. Additionally, there is evidence that willingness to respond to survey has fallen over time in many cultures (Porter, 2004). Thus, considering the present research utilised a mail survey (most questionnaires sent compared to an online survey), the response rate of the present research fell within common expectations.

The 143 individual returns received were further screened with four questionnaires discarded. There were two incomplete questionnaires based on the online survey (not answered at all) and two questionnaires for the mailed survey (either half of the questionnaire or part of the questionnaire). The remaining balances of 139 responses or 13.1% were used for further analysis. Table 4-11 below shows the summary of percentages of responses.

Table 4-11: Percentage of Responses Rate

Individual Reponses	Total Sent	Total Received	Response Rate
Mail survey	1,037	137	13.2
Online survey	22	6	0.6
Total usable responses	1,059	143 ¹	13.5
Incomplete		(4)	
Total response for data analysis		139	13.1

¹ Excluded one response: An email received from one respondent stated that his local authority is not able to participate at this time.

One of the common debates within the quantitative method was whether data from the pilot study could be included in the final research sample. Among the reasons not included was when there were problems with the research tools and modifications had to be made from the findings of the pilot study, hence data could be flawed and inaccurate (van Teijlingen & Hundley, 1998). However, where an established and validated tool is being used, data from the pilot study may be of value (van Teijlingen & Hundley, 1998, p. 2). In addition, if there is no change or improvement in the instrument after the pilot study was carried out whereby the same instrument is used for the final research sample, then it is considered appropriate to combine both the pilot data and final data together for data analysis. Arguably, if the pilot study methods and same characteristics are very close, it is recommended to include the sample of the pilot study into the main study (Thabane et al., 2010). Thus, based on the arguments whether to include data from the pilot study into final analysis, the present research combined data from the pilot study and the final survey in order to strengthen the findings of the main study and provided the justification as follows:

- i. Out of 353 local authorities, 50 local authorities were chosen for the pilot study and the remaining for the final survey. In other words, respondents from the pilot study were excluded from the final survey.
- ii. The samples from the pilot study were the same as samples from the final survey, which was local government officers (Chief Executive, Director of Finance and internal auditors).
- iii. The same methodology was applied for both the pilot study and the final survey such as using a mail and a web-based survey followed by the reminders.
- iv. After conducting the pilot study, the instruments used remained the same as the final survey as no significant changes had been made except the section on the suggestions to improve the questionnaire which was removed for the final survey.

- v. The data based on the pilot study was processed in the same way as the data from the final survey including data cleaning, reliability and factor analysis.

Table 4-12 presented the total number of questionnaires sent to each local authority and the usable response received based on the types of local authority and based on the job title of the respondents. For each local authority, three questionnaires were sent according to their positions. The results indicated that responses received from English County are the most with 70.4%, with the rest of local authorities in the range of 33.3% to 39.4%. Based on the individual responses, internal auditor is the most with 91 responses, followed by Director of Finance with 23 responses. Both Chief Executive and Managing Director were the least with two responses received each.

This study emphasized the confidentiality of the name of local authorities. Thus, any responses received were anonymous. The disadvantage of unknown responses meant that it was difficult to ensure the representative of each local authority. For example, there is a possibility that at least two responses came from the same local authority for any responses received from all the groups (Chief Executives, Directors of Finance and internal auditors). However, there was some feedback from Chief Executives and Directors of Finance that the questionnaire had been given to their internal auditors on their behalf. As the low responses received from the top management; Chief Executive and Managing Director, there is tendency that individual (internal auditors on their behalf), that did response may represent Chief Executives and Directors of Finance. Additionally, the main data analysis used was based on the perceptions of individuals that act as a proxy to their organisation. There is limited analysis on the types of local authority except for control variables.

Table 4-12: Usable response rate based on types of local authorities and respondent

Local Authority	Number of Local Authority	Number of Questionnaires Sent	Number of Questionnaires Received							Percentage (%) of Response Rate
			Type of Local Authority	Chief Executive	Managing Director	Director of Corporate Resources	Director of Finance	Internal Auditor	Counter Fraud Manager	Overall/Based on Questionnaires Sent
English County	27	81	19	0	0	0	2	14	3	23.5
Metropolitan Borough	36	108	12	0	0	0	1	11	0	11.1
English Unitary	56	168	22	0	0	3	1	14	4	13.11
London Borough	33	99	12	1	0	1	2	7	1	12.1
English District	201	603	74	1	2	1	17	45	8	12.3
Total	353	1,059	139	2	2	5	23	91	16	13.1

4.6.3 Non-Response Bias

In any large survey, the problem of non-response bias must be addressed since not all of the participants give responses (Collis, Jarvis, & Skerratt, 2004). The non-response participants were normally not random and in turn may bias survey results such as raised issues to draw a conclusion due to unrepresentative data (Porter, 2004). However, appropriate measures could be taken in order to outcome non-response bias outlined below.

Although the individual response rate was only 13.1%, the overall response received covered all types of English local authorities. As stressed by Fisher & Herrick (2013,p. 150), *'low response rates may be a problem but what is equally important is the representativeness of the respondents'*. According to Harbaugh (2002, p. 70), *'response rates for traditional mail surveys have continued to decline to a point where the average is below 20%'*. For example, a study by Ahmi & Kent (2013) on the statutory auditors in the UK received a 6.57 % response rate. Specifically, studies on fraud in the UK by Button et al. (2007) distributed 1,866 questionnaires to the NHS Counter Fraud Specialist, the London Fraud Investigator Group, and local authority fraud investigation teams, yielding a 22.9 % response rate. In a recent survey on fraud, Gee et al. (2012) stated that only 72 local authorities participated in their study, however the response rate was not mentioned in their report. A report by the Audit Commission (2014), expressed their disappointment as only three out five local authorities participated in a fraud briefing by their external auditor without charge. The report mentioned that 62% from the 353 local authorities invited to participate in the briefing. The expression of the Audit Commission seems valid, as the umbrella body to the local government, including local authorities, should not have a problem to have satisfactory participants among local authorities. On the other hand, there is a possibility that other outside researchers might get less

participation from local authorities. Thus, considering a mixed result of response rate in the previous studies, the response rate of 13.1% was reasonable.

The two main reasons for not responding to the survey include failure to deliver the questionnaire to the target population (e.g. absent from work) and the reluctance of people to respond (Baruch, 2001). In the present research, the contact details of the respondents were carefully collected through local authorities' websites and information received via email from members of the information department in local authorities. Additionally, Klassen & Jacobs (2001) stated that low response rates could be explicated by survey fatigue due to the respondents having had too many requests and therefore refusing to respond to non-essential questionnaires. Another view asserted that the low response occurred for unsolicited surveys and if it involved senior management. As the respondents for the current study are key persons in the organisation, they are known to be less likely to respond to mailed questionnaires than people in the general population (Hunt & Chonko, 1987).

Utilising a mailed survey to representatives of organisations such as Chief Executive Officer, Managing Director, Human Resource Director and others were typically characterised by a lower response rate compared to populations of individuals (Baruch, 1999). According to Fenton-O'Creevy (1996), the low responses rate are due to not have time to answer, not considered relevant and organisational policy not to complete surveys (as cited in Baruch, 1999). For instance, the current research received an email from one participant to request exempt information under Section 3(2) and Section 40 of the Freedom of Information Act.

Some researchers argued that the low response rates could cause problems such as creating unacceptable reduction of sample size which may cause bias (Vaus, 2001). Generally, a

quantitative study that used a survey method, the sample will implicate the population of the study. However, this study did not sample but used the total population by inviting all local authorities to participate. Hence, the present research considered the potential impact of non-response on the ability of surveys to describe large populations. In order to minimize the issues of sample not representing the targeted population, the current study used the non-response bias method as suggested by Armstrong & Overton (1977).

Armstrong & Overton (1977) suggested that to estimate non-response bias, a researcher could use the exploration method. This method indicated that based on the assumption, the participants who respond less readily are more like non-respondents, where less readily referred *'as answering later or as requiring more prodding to answer'* (Armstrong & Overton, 1977, p. 397). The wave analysis method with the t-test was used as the next best approach to compare between the early and late responses received (after the reminder) as suggested by Armstrong & Overton (1977). *'Wave'* was defined as *'the responses generated by a stimulus, such as a follow-up or reminder'* (Armstrong & Overton, 1977, p. 397). In other words, the respondents who answered in later waves were assumed to have responded because of the increased stimulus and were expected to be similar to non-respondents. Armstrong & Overton (1977) suggested using the t-test procedure under the assumptions of both equal and unequal group variances. In the present research, prior to the t-test analysis, 61 responses were identified as early response and 78 responses were grouped as late response. The first group is labelled as '1' and the latter is labelled as '2'. In the t-test analysis for two sample proportions and a 95% confidence level, it was found that there were no significant differences between early and late responses for items in the questionnaire at the 0.05 level. Thus, it may be concluded that non-response bias was not of particular influence in the present research (Skarmas & Bodo, 2002). The key characteristics of the demographic analysis are summarised in Table 5.1 in Chapter 5.

4.7 Data Analysis

The data was exported and analysed using the Statistical Package for the Social Sciences (SPSS) version 21 and SmartPLS 3.0. A range of statistical procedures was adopted to explore the research questions posed and to test the hypotheses. First, it involved the descriptive analysis to explore the results in the form of frequency tables such as the characteristics of the local government and demographic data. Second, in order to identify the factors that influence the intention to use forensic accounting services, the current research used advanced statistical analysis such as factor analysis techniques and multiple regression. Factor analysis can reduce a large set of variables or scale items down into a smaller and more manageable number of factors (Pallant, 2011). The expected results from the factor analysis together with the characteristics of local government will then be tested in the Structured Equation Modelling (SEM).

4.7.1 Exploratory Factor Analysis (EFA)

EFA is used to investigate the underlying variable structure of a psychometric instrument (Osborne & Fitzpatrick, 2012). Furthermore, the main objective of conducting EFA is to reduce a number of observed variables to fewer unobserved factors in order to explore the construct dimensions (Treiblmaier & Filzmoser, 2010). The requirement and measurement of testing EFA were followed guidelines suggested by Hair et al. (2009) outlined below:

- i. the general requirement of sample size for exploratory factor analysis is that sample sizes should be 100 or greater.

- ii. the Bartlett test of sphericity, statistically testing the significance of correlations among variables indicated by the value of chi-square and p-value.
- iii. the Kaiser-Meyer-Olkin (KMO) measures the sampling adequacy indicated by the value in a range from 0 to 1. The recommendation KMO's value suggested: 0.80 or above as meritorious; 0.70 above as middling; 0.60 above as mediocre; 0.50 above as miserable, and below 0.50 as unacceptable.
- iv. retained the factors with eigenvalues greater than 1.0 by considering the theoretical considerations and the scree plot.
- v. the method of factors' extraction is based on the Principal Component Analysis (PCA) that indicated the communalities should be more than 0.50. PCA approach is selected as it is the preferable method for a data reduction (Costello & Osborne, 2005).
- vi. the method of factors' rotation is based on Varimax method (orthogonal approach) with factor loading more than 0.50. Varimax method is preferable as it is the most common method used that minimises the number of variables based on the high factor loadings (Pallant, 2011).

4.7.2 Structured Equation Modelling (SEM)

Structured Equation Modelling (SEM) was used for confirmatory factor analysis and hypothesis testing. SEM known as a second generation multivariate data analysis technique simultaneously testing the measurement model and the structural model (Hair, Thomas, Ringle, & Sastedt, 2014; Lowry & Gaskin, 2014). SEM has been used both in the field of psychology and the social sciences, including business studies such as marketing, information system and accounting (Lee, Petter, Fayard, & Robinson, 2011). Furthermore, previous studies that applied

institutional theory (e.g. Teo et al., 2003; Henderson et al., 2011; Son & Benbasat, 2007) used SEM in the data analysis. Some of the advantages of using SEM are ‘to;

- i. *permit the assessment of the measurement properties of constructs within different theoretical contexts in which they are embedded*
- ii. *deal explicitly with measurement error*
- iii. *provide other benefits to researchers not available with first generation statistical techniques such as multiple regressions, principal component analysis and cluster analysis’*

(Barclay, Thompson, & Higgins, 1995, p. 288)

The first generation statistical techniques such as regression-based approaches (such as multiple regression, discriminant analysis, logistic regression, analysis of variance) and factor or cluster analysis, belong to the core set of statistical instruments which can be used to either identify or confirm theoretical hypothesis based on the analysis of empirical data (Haenlein & Kaplan, 2004, p. 283). The first generation statistical techniques had been applied successfully by many researches previously. On the other hand, the second generation statistical techniques such as SEM involved generalisations and extensions of the first generation procedures (Chin & Newsted, 1999). For example, the regression-based approaches analyse only one layer of linkages between independent and dependent variables at the same time while SEM, as a second generation technique, allows the stimulus modelling of relationships among multiple independent and dependent constructs (Gefen, Straub, & Boudreau, 2000). Additionally, the second generation techniques provide measurement of error for variables unlike the first generation techniques (Haenlein & Kaplan, 2004). Moreover, the central advantages of SEM to the first generation statistical analysis technique is the ability to include latent (unobserved) variables in the causal model (Lowry & Gaskin, 2014). In order to overcome the limitations of first generation techniques, many researchers began using SEM as an alternative (Haenlein & Kaplan, 2004).

There are several distinct approaches to SEM: the first approach is Covariance-based SEM (CB-SEM) using software packages such as AMOS and LISREL. The second approach is Partial Least squares (PLS) or component-based, which focuses on the analysis of variance and can be carried out using PLS-Graph and SmartPLS (Hair et al., 2014). Some of the advantages of PLS over CB-SEM; PLS have as a feature several statistical techniques such as principal component analysis, multiple regression, and redundancy analysis and for preliminary theory building (Lowry & Gaskin, 2014). PLS uses available data to estimate the path relationships in the model with the objective of minimizing the error terms (i.e. the residual variance) of the endogenous constructs. In other words, PLS-SEM estimates coefficients (i.e., path model relationships) that maximize the R^2 values of the (target) endogenous constructs. A summary of recommendations on when to use PLS versus CB-SEM is outlined as Table 4-13 below:

Table 4-13: Recommendations on when to use PLS versus CB-SEM

Model Requirement	PLS	CB-SEM
Includes interaction effects	Preferable, as it is designed for easy interactions	Difficult with small models (not too complex), nearly impossible with large ones
Testing alternative models	Can use	Preferable, as it provides model fit statistics for comparison
Include more than 40-50 variables	Preferable	Sometimes unreliable if it does converge; sometimes will not converge
Non-normal distributions	Preferable (although it will still affect results, just to a lesser extent)	Should not be used; results in unreliable findings
Non-homogeneity of variance	Preferable (although it will still affect results, just to a lesser extent)	Should not be used; results in unreliable findings
Small sample size	It will run (although it will still affect results negatively) Minimal recommendations 30 to 100 cases	Unreliable if it does converge Minimal recommendations range from 200 to 800

(Source: Lowry & Gaskin, 2014; Chin & Newsted, 1999)

Acknowledging the advantages and disadvantages between CB-SEM and PLS, the choice to employ PLS was driven by several factors. First, PLS is *'more forgiving in terms of the structure of the data and the measurement qualities'* (Lee et al., 2011, p. 307). Despite that PLS makes minimal distribution assumptions, this study reports the data normality as presented in EFA and potential outliers. Secondly, this study is investigating and testing the factors that could influence the intention to use forensic accounting services among English local authorities. Thus, PLS is chosen as it is ideal for the early stages of theory development, and, as in the case of this study, the determinant factors (institutional lens together with literature on other important factors) of intention to use forensic accounting services is applied, tested and extended in the new context. Based on the current literature, there is no prior study that investigates the determinant factors to use forensic accounting services among local authorities in England. Finally, PLS requirement on sample size is lower than the other CB-SEM based (Chin, 1998a). For example, the minimal recommendations of sample size for PLS was from 30 to 100 cases while CB-SEM based ranged from 300 to 800 cases (Chin & Newsted, 1999). Additionally, the minimum sample required in PLS was discussed in Section 5.7.1.

The data analysis for SEM in the present research was run using the SmartPLS 3.0 build by Ringle, Wende, & Will (2005). In relation to the indicators (items) used to form each of the constructs of the research model, the criteria established by Chin (1998b) indicated that all latent variable indicators were reflective. The latent variables consisted of central government, Audit Commission, Media, other local authorities, professional bodies and associations, forensic accounting services providers, stakeholders, Audit Committee, strength of internal control, perceived severity, perceived susceptibility, perceived benefits, perceived risks, costs to acquire the services, and intention to use as described in Table 4-6. The details of the

observed variables for each latent variable were also listed in Table 4-6. The analysis followed two stages: (i) the assessment of the measurement model (outer model), and (ii) the assessment of the structural model (inner model) for the reflective constructs as demonstrated in Table 4-14.

Table 4-14: Stages of SEM

Stage	Type of Measurement	Technique	Minimum Requirement
Stage 1	Construct validity: convergent validity and discriminant validity		
Assessment of Measurement Model	Convergent validity	Item reliability- Cronbach's coefficient	Above 0.7 (Nunnally, 1978)
		Internal consistency- Composite reliability	
		Average Variance Extracted (AVE)	Above 0.50 (Fornell & Larcker, 1981) indicates 50% or more variance of the indicators is accounted for (Chin, 1998b)
	Discriminant validity	AVE analysis	Square root of the AVE of a construct is larger than its correlation with other constructs (Barclay et al., 1995)
		Cross loading matrix- Correlation between the latent variable component score and other indicators	Above 0.70 (Hair et al., 2009) where each item should load more highly on its assigned construct than on other constructs (Chin, 1998b)
Stage 2	Coefficient determination	Exploratory power of the model	R ² value should be more than 0.10 (Falk & Miller, 1992) or weak (0.25), moderate (0.50), substantial (0.75) (Hair et al., 2009)
Assessment of the Structural Model	Test of hypotheses	Size and significance of path coefficients Bootstrapping 5000 subsamples (Hair et al., 2014)	Standardized path coefficient Critical t-value for a two-tailed significant test is equal to 1.96 (p=0.05)

(Source: Chin, 1998; Hair et al., 2014)

The measurement model designates the relationship between the indicators and the respective latent variables. Evaluation of the measurement model is undertaken by confirming the construct validity through convergent validity and discriminant validity. In addition, the measurement model is assessed and adjusted by eliminating (Muthusamy, 2011) any item that does not meet the criteria e.g., below 0.70 for factor loading until the criteria of construct validity is met. The structural model assesses the exploratory power of the model by estimating the variance associated with the endogenous constructs. Next, the path coefficients and the directions (positive or negative) of the hypotheses relationships were determined (Muthusamy, 2011).

4.8 Summary

The alternative philosophical and methodological approaches in conducting research have been explored. It is concluded that the current study adopted within the positivism paradigm. A deductive approach was the focus of this study using a cross-section in data collection. The three groups of participants were Chief of Executive Officer, Director of Finance and internal auditors. The response rate for the final survey was considered reasonable compared to previous studies. Additionally, concerns about non-response bias; no difference was found for early and late respondents. Thus, data collected was considered sufficient for data analysis. The next chapter centres on the analysis of the questionnaire and the results obtainable therefrom.

CHAPTER 5: DATA ANALYSIS AND RESULTS

5.1 Introduction

This chapter examines the findings of the study. Both descriptive and inferential statistics were conducted in the data analyses. Prior to the inferential statistic, a descriptive analysis was performed to provide a general overview and clear picture of demographic profile both organisational and individual responses. At the same time, some part of the descriptive analysis was used to answer the research questions. The data collected were entered, checked and analysed using the Statistical Package for Social Sciences (SPSS) version 20. This is followed by the relevant data analysis and assessment. Structural equation modelling (SEM) was adopted for data analysis. The validation of the measurement and structural model were achieved using SmartPLS 3.0. In SEM, the research model is analysed and interpreted into two stages sequentially. The first stage is the assessment and refinement of the adequacy of the measurement model (confirmatory factor analysis) and followed by the assessment and evaluation of the structural model. Prior to that, exploratory factor analysis was conducted to explore the dimensions of constructs. Finally, the results of the hypotheses testing were explained.

5.2 Sample Profile

This section provides a description on the results of the profiles of local authorities surveyed and the profile of the respondents that participated in the survey.

5.2.1 Profile of Local Authorities Surveyed

As described in Section 4.6.2, 139 usable responses for analysis were generated. The demographics of the respondents at organisational level and individual level were analysed to have a clear picture of the sample. This section outlines the information on local authorities' type, political majority, provision of internal audit, net revenue, in-house counter fraud team/unit and utilisation of forensic accounting services. Furthermore, descriptive analysis was carried out on the perceptions towards forensic accounting services, changes of policy and action taken by central government, and the perceptions towards counter-fraud within local authorities. Finally, the profile of individual respondents is described based on the current job title, age, academic qualification, and professional membership.

5.2.1.1 Profile of Local Authorities

The data as depicted in Table 5-1 represents the respondents' types of local authorities. The results show that all types of local authorities represented in the sample. English district councils have the highest percentage of 53.2%, followed by both English unitary councils of 15.8% and English county councils of 13.7%. Both London borough councils and Metropolitan borough councils accounted for almost 9%. Overall, the highest percentage of responses from English district councils is similar to the data provided by GOV.UK (2012b) that indicated English district councils are the most significant type. The details of the total number of questionnaires sent and response rate were discussed in Section 4.6.

Table 5-1: Profile of Local Authorities

Profile		Frequency	Percentage (%)
Types of Local Authority	English County Council	19	13.7
	Metropolitan Borough Council	12	8.6
	English Unitary Council	22	15.8
	London Borough Council	12	8.6
	English District Council	74	53.2
	Total	139	100.0
Political Majority	Conservative	64	46.0
	Labour	44	31.7
	Liberal Democrat	6	4.3
	Independent Group	3	2.2
	Other/ Hung	22	15.8
	Total	139	100.0
Net Revenue	Less than £100 million	66	47.5
	£101 million - £400 million	36	25.9
	£401 million - £700 million	18	12.9
	£701 million - £1,000 million	9	6.5
	£1,001 million - £1,300 million	2	1.4
	£1,301 million - £1,600 million	0	0.0
	£1,601 million - £1,900 million	0	0.0
	More than £1,900 million	8	5.8
	Total	139	100.0
Current provision of internal audit services	Maintained in-house	82	59.3
	Fully outsourced	22	15.8
	Joint/shared services	27	19.4
	Partially outsourced	8	5.8
	Total	139	100.0
Current provision of in-house counter fraud	Has an in-house counter fraud	98	70.5
	No in-house counter fraud	41	29.5
	Total	139	100.0
Number of staff in-house counter fraud	Less than 10	88	89.8
	10- 15 staff	7	7.2
	15-20 staff	0	0
	21-25 staff	1	1
	Sub-Total	96	98.0
	Missing	2	2.0
	Total	98	100.0

The breakdown data indicated a satisfactory range of representation among local authorities. The three main parties in England; Conservative, Labour, and the Liberal Democrats account for 46.0%, 31.7%, and 4.3% respectively. The remaining was either Independent Group of 2.2% and hung with no control of 15.8%. The results were aligned with the current political make-up of local authorities in England.

It is apparent from this table that the majority of local authorities surveyed (59.3%) reported the existence of an internal audit function in-house in their organisations. Furthermore, 15.8% local authorities fully outsourced their audit activities and 5.8% partially outsourced their internal audit function. Similarly, a study by Selim & Yiannakas, (2000) found that most of the organisations (public and private sector) had internal audit in-house (160 organisations).

The majority of local authorities surveyed have net revenue less than £100 million with 47.5%. This was followed by net revenue between £101 million to £400 million and £401 million to £700 million with 25.9% and 12.9% respectively. A total of 11 local authorities had net revenue more than £1 billion, with each representing 1.4% of net revenue between £1 billion to £1.3 billion and 5.8% of net revenue more than £1.9 billion. The results suggest that local authorities with various level of net revenue participated in the current research..

The data also revealed that more than 70.5% of local authorities do have an in-house counter fraud team/unit. However, majority of local authorities surveyed indicated that the number of staff in their counter fraud unit/team was less than 10 staff. As expected, only a council in London Borough had more than 20 staff in the counter fraud team/unit, which supported the claim by Lane (2011) that London boroughs were no less competent or effective in countering fraud. The remainder of almost 30% stated no in-house counter fraud arrangement in place.

Table 5-2 depicted the cross tabulation against types of local authorities and the number of staff in-house counter fraud team/unit.

Table 5-2: Number of Staff vs. Types of Local Authorities

Types of Local Authorities	Number of local authorities with counter fraud team/unit	Percentage (%)	Number of staff in counter fraud team/unit		
			Less Than 10	10-15 staff	21-25 staff
English County	11	11.2	10	1	0
Metropolitan Borough	12	12.2	10	2	0
English Unitary	19	19.4	17	1	0
London Borough	11	11.2	9	1	1
English District Council	45	45.9	42	2	0
Total	98	100.0	88	7	1

Note: An English Unitary and an English District Council did not answer for the number of staff in counter fraud team/unit; resulted total with number of staff was 96 (88+7+1).

5.2.2 Profile of the Respondents Surveyed

This section describes the demographic characteristics of the respondents at the individual level as depicted in Table 5-3. Within the sample, the majority of responses were internal auditors with more than 65.5%. Director of Finance or Section 151 officers contributed 16.5%, followed by Corporate Fraud officers with 11.5%. Meanwhile, the responses received from Director of Corporate Resources were 3.6% with the least received from the Chief Executive and Managing Director of 1.4% each. The majority of respondents were in the range 41 to 50 years old and held a bachelor degree with 45.3% and 53.2%, respectively. In terms of professional bodies, the data revealed that most of the respondents were a member of the CIPFA; more than 51.8%. Only 5.8% of respondents surveyed held a membership in the ICFS, which is a specific professional body in fraud in the UK. Overall, the respondents that participated in the survey of the present research were sufficiently knowledgeable in fraud prevention and detection activities, which was vital in giving meaningful answers in the questionnaire.

Table 5-3: Demographic Profile

Profile	Category	Frequency (n=139)	Percentage (%)
Current Job Title	Chief Executive	2	1.4
	Managing Director	2	1.4
	Director of Corporate Resources	5	3.6
	Director of Finance/S 151 Officer	23	16.5
	Chief/Head/Manager of Internal Audit	91	65.5
	Chief/Head/Manager of Corporate Fraud	16	11.5
	Total	139	100
Age Group	Less than 30 years	3	2.2
	31-35 years	8	5.8
	36-40 years	9	6.5
	41-45 years	32	23.0
	46-50 years	31	22.3
	51-55 years	19	13.7
	56-60 years	25	18.0
	Above 60 years	6	4.3
	Missing	6	4.3
	Total	139	100
Academic qualification	BA/BSc	74	53.2
	MA/MSc/MBA	32	23.0
	PhD/DBA	3	2.2
	Other	22	15.8
	Missing	8	5.8
	Total	139	100
Professional membership	The Association of Chartered Certified Accountant (ACCA)	11	7.9
	The Institute of Chartered Accountants in England and Wales (ICAEW)	7	5.0
	The Chartered Institute of management Accountant (CIMA)	1	0.7
	The Chartered Institute of Public Finance and Accountancy (CIPFA)	72	51.8
	The Chartered Institute of Internal Auditors (CIIA)	26	18.7
	The Institute of Counter Fraud Specialists (ICFS)	8	5.8
	The Association of Certified Fraud Examiners (ACFE)	1	0.7
	Other	4	2.9
	Missing (Not answered)	9	6.5
	Total	139	100

5.2.2.1 Membership of the Professional Bodies

Additionally, Table 5-4 shows a cross tabulation of the respondents against their professional membership. The CIPFA membership was held by most of the group of respondents except for the Chief Executive. The breakdown of the numbers was Managing Director (2), Director of Corporate Resources (5), Director of Finance (18), internal auditors (43), and counter fraud officers (4). The counter fraud officers were the majority that held membership in the ICFS with six respondents followed by two internal auditors.

Table 5-4: Job Title and Professional Memberships

Job Title/Professional bodies	Chief Executive	Managing Director	Director of Corporate Resources	Director of Finance/S 151 Officer	Chief /Head /Manager of Internal Audit	Chief /Head /Manager of Corporate Fraud Team	Missing	Total
The Association of Chartered Certified Accountant (ACCA)	0	0	0	2	9	0		11
The Institute of Chartered Accountants in England and Wales (ICAEW)	0	0	0	3	4	0		7
The Chartered Institute Management Accountant (CIMA)	0	0	0	0	1	0		1
The Chartered Institute of Public Finance and Accountancy (CIPFA)	0	2	5	18	43	4		72
The Chartered Institute of Internal Auditors (CIIA)	0	0	0	0	25	1		26
The Institute of Counter Fraud Specialists (ICFS)	0	0	0	0	2	6		8
The Association of Certified Fraud Examiner (ACFE)	0	0	0	0	0	1		1
Other	1	0	0	0	2	1		4
Missing							9	9
Total	1	2	5	23	86	13	9	139

5.3 The Use of Forensic Accounting Services

This section covers the results of utilisation of forensic accounting services, forensic accounting services providers, types of forensic accounting services used, level of satisfaction and level of intention to continue use the services.

5.3.1 Utilisation of Forensic Accounting Services

Table 5-5: Use of Forensic Accounting Services

Utilisation of forensic accounting services	Number of Local Authorities	Percentage (%)
Currently using or had used	26	18.7
Not using	113	81.3
Total	139	100.0

As shown in Table 5-5, only 18.7% of local authorities that responded to the survey either currently use or had used forensic accounting services. The results show the state of utilising forensic accounting services by English local authorities as little is known on the use of forensic accounting services, especially in English local authorities. Therefore, the result highlights the importance to conduct the present research on the use of forensic accounting services by local authorities in England.

Table 5-6: Cross Tabulation: The use of forensic accounting services

Local Authorities Type	Number of Local Authorities Currently Using or Had Used Forensic Accounting Services	Percentage (%)
English County Council	7	26.9
Metropolitan Borough Council	2	7.7
English Unitary Council	3	11.5
London Borough Council	4	15.4
English District Council	10	38.5
Total	26	100.0

Cross tabulation analysis is used to determine the types of local authorities that have utilised forensic accounting services. The result from the survey as shown in Table 5-6 revealed that all types of local authorities surveyed have utilised forensic accounting services, with English district councils the highest with 38.5%, followed by county councils of 26.9%.

5.3.2 Forensic Accounting Services Providers

This section describes the results of the providers used by local authorities that utilised the forensic accounting services.

Table 5-7: Forensic Accounting Services Providers

Category of Providers			Number of Local Authorities		Percentage (%)	
Big Four Accounting Firms			10		33.3	
Other Than Big Four Accounting Firms			20		66.7	
Total ²			30		100.0	
Local Authorities Types	Big Four Accounting Firms		Other Than Big Four Accounting Firms		Total	
	Number of Local Authorities	(%)	Number of Local Authorities	(%)	Number of Local Authorities	(%)
English County Council	2	20.0	5	26.3	7	24.1
Metropolitan Borough Council	2	20.0	2	10.5	4	13.8
English Unitary Council	0	0	3	15.8	3	10.3
London Borough Council	2	20.0	3	15.8	5	17.2
English District Council	4	40.0	7	31.6	10	34.5
Total	10	100.0	20	100.0	30	100.0

² Total number of local authorities currently using or had used forensic accounting services was higher than figure in Table 5-7, as there were local authorities that used both 'Big Four' and other than 'Big Four' accounting firms.

Table 5-7 provides information on the providers of forensic accounting services used by local authorities that responded to the survey. The data shows that most of local authorities surveyed choose other than the Big Four accounting firms with 66.7%. For example, some of the service providers stated by the respondents include other local authorities with specialist staff, and part of outsourced service provided by other local authorities. The questionnaire in the present research made note that the Big Four accounting firms are KPMG, PwC, Deloitte, and EY.

Cross tabulation of types of local authorities and forensic accounting services providers indicated that 40% of English district councils sought forensic accounting services from the Big Four accounting firms. English unitary councils, however, acquired forensic accounting services from other than the Big Four accounting firms only with 15.8%.

5.3.3 Types of Forensic Accounting Services Used

This section explains the results on the types of services used by local authorities that utilised forensic accounting services.

Table 5-8: Types of Forensic Accounting Services Used

Types of Forensic Accounting Services and Nature Detection (D) Investigation (I) Prevention (P)		Use				Occurrence
		Within Year		Used More Than a year Ago		
		n	%	n	%	
Digital forensic including data mining, data imaging and recovery	I	6	23	10	28	16
Asset tracing and recovery	I	7	27	5	14	12
Fraud investigations	I	7	27	5	14	12
Fraud detection	D	7	27	4	11	11
Fraud risk management	P	8	31	3	12	11
Fraud training	P	5	14	5	14	10
Fraud prevention system	P	5	14	4	14	9
Reviewing current counter-fraud procedures	P	5	14	4	14	9
Litigation support and expert witness	I	2	7	4	14	6
Assessing and improving internal control system	P	5	14	1	4	6
Developing regulatory compliance strategies	P	4	11	0	0	4
Prosecution cases	I	3	12	1	4	4
Damage or loss quantification	I	2	7	1	4	3

As shown in Table 5-8, types of forensic accounting utilised by the surveyed local authorities were also analysed. The types of forensic accounting services are divided into three categories based on the nature of the services: Detection (D), Investigation (I) and Prevention (P). The results indicated that fraud investigation was the most type of services used by local authorities with digital forensic, asset tracing and fraud investigations were in the top three. Under fraud prevention, some of the services highly used were fraud risk management, fraud training, fraud prevention system and reviewing counter-fraud procedures. The results also show that digital forensic was the most used type of forensic accounting services utilised, with 23% local authorities using this within year and 28% used more than a year ago. This followed by asset

tracing and recovery and fraud investigations which both represent 27% used within year. Additionally, fraud prevention system and fraud detection were utilised by 14% (within year) and 27% (within year) of local authorities, respectively. The least type of services used were damage or loss quantification and prosecution cases with 7% of local authorities acquiring the services within year.

5.3.4 Level of Satisfaction towards the Forensic Accounting Services Providers

This section describes the results on the level of satisfaction perceived by local authorities towards the forensic accounting services providers.

Table 5-9: Satisfaction of Using Forensic Accounting Services

Satisfaction level / Types of providers	Number of local authorities					Total
	Very dissatisfied	Dissatisfied	Uncertain	Satisfied	Very satisfied	
Big Four accounting firms ³	1	1	3	3	2	10
Other than Big Four accounting firms	2	0	4	8	6	20
Total	3	1	7	10	8	30 ⁴

Table 5-9 outlined the level of satisfaction on the quality of services provided by both the Big Four accounting and other accounting firms. The results indicated that the majority of local authorities surveyed that used the forensic accounting services sought the services from other than the Big Four accounting firms. A total of ten local authorities that used the Big Four

³ Big four accounting firms refer to KPMG, PwC, Deloitte, and EY

⁴ Same as footnote 1

accounting firms and 20 local authorities that used other accounting firms stated that they were satisfied with the level of services by the accounting firms.

5.3.5 Level of Intention to Continue Using Forensic Accounting Services

This section covers a description on the results on the level of intention to continue using forensic accounting services.

Table 5-10: Intention to Continue Forensic Accounting Services

Intention to continue	Decrease	Decrease slightly	Uncertain	Increase slightly	Increase significantly	Total
Number of local authorities	3	2	16	4	1	26

Table 5-10 describes the level of intention to continue using forensic accounting services. The results show that most of local authorities surveyed were uncertain about the decision. However, the remaining local authorities responded that their intention either decreased or increased in using forensic accounting services in the future.

5.4 Perceptions about Core Skills/Essential Traits of Forensic Accountants

This section describes the results on the perceptions on the core skills/essentials traits of forensic accountants.

Table 5-11: Perceptions toward Forensic Accountants

Core skills/ Essential traits of forensic accountants	Rank					Total	Percentage (%) (n=139)
	1	2	3	4	5		
Auditing skills	29	16	12	13	7	77	55.4
Analytical/critical thinking	57	24	13	7	9	110	79.1
Effective oral communication	1	2	5	8	7	23	16.5
Effective written communication	4	4	4	16	20	48	34.5
Identifying key issues	5	14	18	13	4	54	38.8
Investigative ability	29	25	32	16	7	109	78.4
Investigative intuition	4	17	5	14	7	47	33.8
Motivation	1	1	4	5	15	26	18.7
Problem solving skills	2	8	18	10	10	48	34.5
Research skills	1	8	8	6	11	34	24.5
Scepticism		5	6	4	4	19	13.7
Simplifying the information	1	4	4	10	6	25	18.0
Think like the wrongdoer	1	1	2	4	14	22	15.8
Understand the goals of the case	4	6	2	7	3	22	15.8
Synthesise results of investigations	1	4	6	8	13	31	22.3

Table 5-11 outlined the results of perceptions of local authority's officers towards the core skills and essential traits posed by a forensic accountant. Overall, analytical/critical thinking was ranked first with 110 respondents, followed by investigative ability with 109 respondents. Based on the overall percentage, analytical/critical thinking was 79.1%, investigative ability was 78.4%, auditing skills was 55.4%, and identifying key issues was 38.8%, respectively.

Table 5-12: Perceptions toward Forensic Accountants by Group

	Group 1	% (n=32)	Rank	Group 2	% (n=32)	Rank	Group 3	% (n=32)	Rank
Auditing skills	3	2.2	2	14	10.4	3	60	43.0	4
Analytical/critical thinking	2	1.5	3	17	12.6	2	91	63.0	1
Effective oral communication	0	0		5	3.7		18	12.6	
Effective written communication	1	0.7		10	7.4		37	25.9	
Identifying key issues	0	0		7	5.2		45	33.3	5
Investigative ability	4	3.0	1	22	16.3	1	84	60.0	2
Investigative intuition	2	1.5	3	7	5.2		37	26.7	
Motivation	0	0		4	3.0		22	48.8	3
Problem solving skills	2	1.5	3	13	9.6	4	33	23.0	
Research skills	2	1.5	3	11	8.1	5	21	15.6	
Scepticism	1	0.7		7	5.2		11	7.4	
Simplifying the information	0	0		4	3.0		21	15.6	
Think like the wrongdoer	1	0.7		5	3.7		16	10.4	
Understand the goals of the case	0	0		5	3.7		17	11.9	
Synthesise results of investigations	2	1.5	3	9	6.7		20	14.1	

Table 5-12 revealed the perceptions of core skills and essential traits of forensic accountants, according to the group of respondents. Both Group 1 (Chief Executive and Managing Director) and Group 2 (Director of Corporate Resources and Director of Finance) agreed that investigative ability is the most important, but Group 1 ranked auditing skills, while Group 2 ranked analytical/critical as the second most important. Group 3 (internal auditors and counter fraud managers), however, ranked analytical/critical thinking as the most important, followed by investigative ability while auditing skills as the fourth most important. The results show that there are different views among the groups of respondents on the importance of core skills and essential traits of forensic accountants. Further discussion on the findings and implications were discussed on Section 6.2.2.

5.5 Descriptive Statistics

This section describes the results of descriptive analysis on the awareness of forensic accounting services, perceptions towards the government actions related to fraud and fraud within local authorities.

Table 5-13: Descriptive Statistics

Statements	Agreement (By number of responses)					Descriptive Statistics
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	M (SD)
Awareness of forensic accounting services						
My local authority is aware of the role of forensic accounting services in fraud detection and prevention	2	29	34	68	6	3.34(0.91)
My local authority is knowledgeable about the benefits of using forensic accounting services	4	41	44	48	2	3.02(0.91)
My local authority is knowledgeable about the risks of using forensic accounting services	4	41	51	41	2	2.97(0.88)
Overall, my local authority's perception of forensic accounting services is positive	1	17	89	27	5	3.13(0.70)
Perceptions towards the Government actions related to fraud						
The creation of the Single Fraud Investigation Service (SFIS) provides benefits to counter fraud activities in my local authority	46	31	43	17	2	2.28 (1.09)
The abolishment of the Audit Commission has had a negative impact on counter fraud activities in my local authority	17	46	45	23	8	2.71 (1.066)
A standard definition of fraud that can be used by all local authorities needs to be developed to establish a more reliable picture of fraud and to make an appropriate allocation of counter fraud resources in my local authority	4	36	51	39	9	3.09 (0.96)
The austerity measures introduced by central government have had a negative impact on the resources available for counter fraud activities in my local authority	5	13	29	65	27	3.70 (1.01)
Lack of counter fraud standards at national level affects my local authority to detect and prevent fraud	8	51	57	19	4	2.71 (0.88)

Statements	Agreement (By number of responses)					Descriptive Statistics
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	M (SD)
Fraud within local authorities						
A fraud awareness campaign is an important tool to prevent and deter fraud in my local authority	0	0	9	83	47	4.27(0.58)
My local authority shares data and fraud intelligence with other local authorities	3	5	12	78	41	4.07(0.85)
Other local bodies such as the NHS and the DWP that are considered effective in how they tackle fraud led my local authority to use forensic accounting services	41	64	26	8	0	2.00(0.85)
It is difficult to estimate the total economic cost of fraud in my local authority	10	0	38	67	24	3.76(0.82)
My local authority is able to retain (or recruit) people with the necessary skills	3	15	51	61	9	3.42(0.85)
My local authority evaluates the strength of anti-fraud cultures regularly	6	31	46	51	5	3.13(0.95)

The final part of the descriptive analysis examines the awareness of forensic accounting services, perceptions towards the government actions related to fraud, and perceptions of fraud within local authorities. Some of the results will be used to support the findings on the related factors that influence local authorities' intention to utilise forensic accounting services in Chapter 6 (Findings and Interpretations). Table 5-13 provides the results on the perceptions towards the forensic accounting services, changes on the policy or action taken by central government, and counter fraud activities within local authorities.

In order to examine the awareness of forensic accounting services, the respondents were asked the following questions as depicted in Table 5-13. Most local authorities surveyed indicated that they were aware of the role of forensic accounting services ($M = 3.32$, $SD = 0.91$). However, the majority of local authorities surveyed were neutral on the overall perception of forensic accounting services ($M = 3.13$, $SD = 0.67$). Overall, the majority of local authorities surveyed were aware of the existence of forensic accounting services, which shows their ability to respond to the survey of the present research.

In recent years, central government made some changes in the counter fraud arrangement for local authorities (Audit Commission, 2014). The majority of local authorities surveyed disagreed that the creation of the SFIS provides benefits to counter fraud activities in their local authority ($M=2.27$, $SD= 1.09$). However, the austerity measures introduced by central government have had a negative impact on the resources available for counter fraud activities in local authorities surveyed ($M=3.70$, $SD = 1.01$).

The descriptive analysis on the fraud within local authorities revealed that most local authorities surveyed indicated an agreement for all the statements except the role of other local bodies, the NHS, and the DWP that are considered effective in tackling fraud influence their intention to use forensic accounting services ($M=2.01$, $SD=0.85$). The statement is derived from the argument stated in the Fraud Review by The Attorney General's Office (2008, p. 96) stating that local authorities were '*less well equipped*' than some government departments.

5.6 Data Analysis Techniques

The data analysis process for the current thesis involved two main stages:

- i. Carrying out factor analysis, both exploratory factor analysis (using SPSS 20) and confirmatory factor analysis based on the measurement model of Structural Equation Modelling (SEM) (using SmartPLS 3.0)
- ii. Carrying out a regression analysis for testing the proposed hypotheses based on the structural model of SEM (using SmartPLS 3.0)

5.6.1 Factor Analysis

Factor analysis refers to *'an interdependence technique whose primary purpose is to identify the underlying structure among the variables in the analysis'* (Hair et al., 2010, p.93). There are two methods for factor analysis: Exploratory and confirmatory factor analysis (Thompson, 2004). In order to determine the dimensionality of the items used to measure variables, exploratory factor analysis is used to meet the objective. Then, confirmatory factor analysis is carried out to confirm the factor structure based on the loadings for each item measured.

5.6.2 Data Screening

Hair et al. (2010) suggested data examination before carrying out further data analysis. After data had been entered into SPSS Version 20, a further assessment of the data case by case is done to identify any errors such as missing or incomplete data. As a result, four questionnaires were identified as incomplete. In line with the recommendations by Hair et al. (2010), the incomplete responses were removed, in which a total of 139 responses were considered valid for further analysis.

5.6.2.1 Detection of Outliers

Outliers are atypical, infrequent observations that appear to be inconsistent with the majority of the observations in a data set (Hair et al., 2009). In other words, data points that fall outside the range may then be identified as potential outliers. Univariate outliers are outliers that occur within a single variable, and multivariate outliers could exist in a combination of scores on two or more variables (Tabachnick & Fidell, 2007). Outliers in a dataset most likely derived from:

- i. Data errors: a source of outlying observations is a data entry error
- ii. Rare event syndrome: extreme observations that for some legitimate reason do not fit within the typical range of other data values.

5.6.2.2 Univariate Outliers

The present study used outlier labelling rule introduced by Tukey (1997) to determine the potential of univariate outliers (as cited in Hoaglin & Iglewicz, 1987, p. 1147). The outlier labelling rule identifies any observations that are considered having extreme value (outliers) within a parameter shown below:

$$Y < [Q1 - k (Q3 - Q1) \text{ or } Y > Q3 + k (Q3 - Q1)]$$

Where Y is the observation, Q1 is the first quartile and Q3 is the third quartile in a dataset, and k is a fixed constant value (2.2)

In order to select the potential outliers for the present dataset, a descriptive analysis using SPSS V.20 is conducted that produced the box plots and the value for Q1 and Q3. Using the formula above, the value of Y (the lower value and the upper value) will be compared to the extreme value (lowest and highest) in the dataset. The results as shown in Table 5-14 indicate that the lowest value and the highest value for each construct were within the range of the value of Y (the lower value and the upper value). Thus, the univariate outliers in the current research dataset are tolerable.

Table 5-14: Univariate Outlier-Labelling rule

Constructs	Q1	Q3	Y (Lower value)	Y (Upper Value)	Lowest Value in the Dataset	Highest Value in the Dataset
1. Central government & agencies (CGT)	15	20	4	31	6	24
2. Audit Commission (ACM)	10	12	5.6	16.4	4	15
3. Media (MDN)	11	15	2.2	23.8	5	20
4. Other local authorities (LAM)	5	8	-1.6	14.6	2	10
5. Prof. bodies & assoc. (NBP)	8	11	1.4	17.6	3	13
6. Stakeholder (STH)	9	11	4.6	15.4	5	15
7. Forensic accounting providers (FSB)	7	9	2.6	13.4	3	14
8. Benefits of forensic accounting (BFT)	7	11	-1.8	19.8	3	15
9. Costs (COF)	8	11	1.4	17.6	3	14
10. Risk (RISK)	6	8	1.6	12.4	2	10
11. Perceived severity (SVF)	14	18	5.2	26.8	9	25
12. Perceived susceptibility (PSF)	6	10	-2.8	18.8	3	15
13. Audit Committee (ACT)	15	20	4	31	12	24

14.Internal control (ICON)	12	14	7.6	18.4	8	15
15.Intention to use (INT)	3	5	-1.4	9.4	2	10

5.6.2.3 Multivariate Outliers

The current research employed Mahalanobis distance score approach of handling multivariate outliers. Mahalanobis distance *'is the distance of a case from the centroid of the remaining cases where the centroid is the point created at the intersection of the means of all the variables'* (Tabachnick & Fidell, 2007, p. 74). In order to determine the value of Mahalanobis distance, a liner regression is conducted. The results yielded the residual statistic including the maximum value of Mahalanobis distance which is 31.939. The next step is to refer the upper critical values of chi-square distribution with 15 variables (number of variables used in the linear regression) degrees of freedom with levels of significance of 0.001 (Hair et al., 2009). The critical value for 15 variables at a critical alpha of 0.001 is 36.123. Therefore, the highest value of Mahalanobis distance of 31.939 is within the range of the critical value of 36.123, suggested tolerable outliers in the dataset.

5.6.3 Exploratory Factor Analysis (EFA)

EFA is used to investigate the underlying variable structure of a psychometric instrument (Osborne & Fitzpatrick, 2012). Furthermore, the main objective conducting EFA is to reduce a number of observed variables to fewer unobserved factors in order to explore the construct dimensions (Treiblmaier & Filzmoser, 2010). As a guideline, this study adopted approach by Hoban, Lawson, Mazmanian, Best, & Seibel (2005) in reporting the results of EFA.

5.6.3.1 Sample Size Requirement

The requirement of sample size for exploratory factor analysis was highlighted by (Hair et al., 2009). The general guide is that sample sizes should be 100 or greater. Based on the guideline, the sample size of 139 is sufficient to conduct exploratory factor analysis. The total items in the model were 63.

5.6.3.2 Method of EFA

This study employed Principal Component Analysis (PCA) to extract factors and Varimax method based on orthogonal rotation (Pallant, 2011) with factor loading greater than 0.50 (Hair et al., 2009). Extracted factors were examined and named based on the analysis of the items loading on the proposed factors. Descriptive statistics on the proposed factors were carried out. Additionally, Cronbach alpha was used to determine the internal consistency and skewness and kurtosis value to examine data normality.

5.6.3.3 Results of EFA

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.685 with $N = 139$ indicating that the sample is adequate enough to detect factors (Hoban et al., 2005). The result for the communalities confirmed that high variation ranging from 0.571 to 0.904 indicated high variance among the variables (Hair *et al.*, 2010). The Bartlett's Test of Sphericity (BTOS) revealed a significant chi square of ($p < 0.05$). Based on eigenvalue, the 15 factors solution, which explained 78.034% of the variance, was preferred because of theoretical support similar

to the expected number of variables in the proposed model. The report on the results of KMO, BTOS, communalities, eigenvalue and scree plot is provided as per Appendix 7.

After the process of refining EFA, 47 items with factor loading more than 0.50 were retained. However, 16 items were eliminated as shown in Table 5-15 due to not contributing to a simple structure and failed to meet a minimum criteria of having a primary factor loading of 0.5 above, and no cross-loading of 0.3 or above (Neill, 2008). Further analyses found that some items (ACM1, ICON4, ICON5, BFT4 and BFT5) emerged as new constructs. A detailed examination on the questionnaire was carried out to check the statements used, whether the items shared the common themes to be as a factor. In the questionnaire, ACM1 was asking about the reports on fraud issued by the Audit Commission, which have a similar question to item CGT3 and CGT4 as outlined in Table 4-6.

Table 5-15: Items Eliminated

Item Code	Below 0.5	Cross loading between more than 3 factors with 0.3 differences	Cross loadings between more than 3 factors with 0.2 differences
1. ACM2	√	√	
2. ACM3		√	
3. NBP1	√		√
4. NBP4			√
5. ASC 1	√	√	
6. ASC 2	√		
7. ASC 4		√	
8. ACT1	√		√
9. ACT2	√	√	
10. ACT3	√		√
11. ACT4		√	
12. BFT6	√		
13. BFT7		√	
14. RIS1	√		√
15. SHT2	√	√	
16. SHT5	√		

ICO4, ICO5, and ICO6 was related to counter fraud in local authorities, which differs from the theme in questions about the strength of internal control systems for item ICO1, ICO2, and ICO3 as depicted in Table 5-16 below:

Table 5-16: New constructs-Counter fraud resources

Item Code	Statements in the questionnaire
ICO4	In my local authority, the number of staff and resources allocated are adequate to counter fraud
ICO5	In my local authority, those working to counter fraud have received specialist professional training and accreditation
ICO6	The effectiveness of in-house fraud investigation in my local authority is very high

Finally, BFT4 and BFT5 directly related to differences between forensic accountants and both internal and external auditors compared to items BFT1, BFT2, and BFT3 which focused more on the benefits of forensic accounting services as shown in Table 5-17 below:

Table 5-17: New constructs: Perceptions towards forensic accountants

Item Code	Statements in the questionnaire
BFT4	Forensic accountants have more objectivity and credibility in fraud detection and prevention than internal auditors
BFT5	Forensic accountants have more objectivity and credibility in fraud detection and prevention than external auditors

Based on a qualitative assessment of the loadings, the new constructs were named counter fraud resources (CTF) and perceptions towards forensic accountants (PFA). Additionally, item of ACM1 merged into central government and related agencies (CGT) while eliminating the Audit Committee (ACT) and Audit Commission (ACM) constructs as shown in Table 5-18.

Table 5-18: Emerging and Eliminating Constructs

Item Code	Eliminated/Separated/Merged Constructs	Proposed factor based on a common theme
1. ACM1	Merged with CGT1, CGT2, CGT3, CGT4	Central government and related agencies (CGT)
2. ICO4, ICO5 and ICO6	Separated with ICO1, ICO2, ICO3	Counter fraud resources (CTF)
3. BFT4 and BFT5	Separated with BFT1, BFT2, BFT3	Perceptions towards forensic accountants (PFA)
4. ACT1, ACT2, ACT3, ACT4	Eliminated (Audit Committee)	None
5. ACM2 and ACM3	Eliminated (Audit Commission)	None

Thus, the summary of the results after several iterations and the removal of weaker items: an empirically validated 15-factor solution emerged as depicted in Table 5-19.

Table 5-19: Rotated Component Matrix

	Component														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MDN2	.908														
MDN4	.892														
MDN1	.878														
MDN3	.860														
MDN5	.769														
CGT2		.841													
CGT3		.821													
ACM1		.817													
CGT4		.807													
CGT1		.797													
SVF3			.855												
SVF2			.790												
SVF4			.723												
SVF1			.658												
SVF5			.587												
BFT1				.881											
BFT2				.824											
BFT3				.812											
PSF2					.901										
PSF3					.883										
PSF1					.864										
COF2						.866									

	Component														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
COF1						.849									
COF3						.814									
ICO6							.832								
ICO4							.830								
ICO5							.807								
NBP3								.867							
NBP2								.803							
ASC3								.765							
SHT1									.864						
SHT3									.836						
SHT4									.679						
ICO2										.866					
ICO1										.807					
ICO3										.717					
FSB2											.821				
FSB1											.731				
FSB4											.685				
LAM2												.857			
LAM1												.837			
BFT5													.855		
BFT4													.824		
RIS3														.907	
RIS2														.791	
INT2															.635
INT1															.548

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Factor loadings <0.5 are suppressed

Overall, the results of exploratory factor analysis indicated 15 distinct factors. The factors within the institutional theory suited the extracted factors; Central government and related agencies (Coercive), perceived used and success by other local authorities (Mimetic), and professional and association bodies, forensic accounting providers and stakeholders (Normative). Internal consistency for each of the scales was examined using Cronbach's alpha. The alphas range from 0.701 to 0.935, which is greater than 0.60 (Hair *et al.*, 2010). Descriptive statistics are presented in Table 5-20. Examinations of a normal distribution revealed that the

skewness and kurtosis were well within a tolerable range. Data is considered normal if both the value of the skewness and kurtosis fall within a range of -1 to 1(Hair et al., 2014).

Table 5-20: Descriptive Statistic after EFA (N=139)

Constructs	Initial no. of items	No. of items After EFA	M (SD)	Skewness	Kurtosis	Cronbach Alpha
1.CGT	4	5	17.34(3.80)	-1.066	.739	0.900
2.MDN	5	5	14.10(3.01)	-.200	-.019	0.935
3.LAM	2	2	6.30(1.80)	-.375	-.220	0.755
4.NBP	8	3	9.14(2.39)	-.603	.077	0.845
5.STH	5	3	10.59(1.91)	-.224	.122	0.779
6.FSB	3	3	7.87(1.74)	-.031	1.143	0.701
7.BFT	7	3	9.01(2.38)	-.224	-.172	0.876
8.PFA	0	2	5.76(1.90)	-.016	-.306	0.759
9.COF	3	3	9.55(2.25)	-.353	-.525	0.846
10.RIS	3	2	7.19(1.68)	-.794	.873	0.731
11.SVF	5	5	16.16(3.30)	.300	.358	0.792
12.PSF	3	3	8.43(2.46)	.291	.118	0.876
13.CFT	0	3	12.41(1.60)	-.204	-.164	0.754
14.ICO	6	3	10.94(2.33)	-.836	.564	0.812
15.INT	2	2	3.86(1.70)	.999	.563	0.909
16.ACM	3	-	Factors eliminated			
17.ACT	4	-				
Total items	63	47				

M=Mean, SD= Standard Deviation

5.6.4 Arrangement of Proposed Hypotheses after EFA

Based on the EFA, the results indicated that the Hypothesis 2 (Audit Commission) and Hypothesis 13 (Audit Committee) as described in Chapter 3 be removed from the proposed model. However, two new hypotheses are generated; the perceptions of the objectivity and credibility between forensic accountants and auditors would positively influence the intention of English local authorities to use forensic accounting services, and the strength of in-house

counter fraud will negatively influence the intention of English local authorities to use forensic accounting services as outlined below in Table 5-21:

Table 5-21: List of Revised Hypotheses

New Arrangement of Hypotheses	Construct
H1: Directives, rules, and policies (including initiatives and action plan) from central government and reports on fraud by the related government agencies will positively influence the intention of English local authorities to use forensic accounting services	CGT
H2: News of fraud highlighted by the media will positively influence the intention of English local authorities to use forensic accounting services	MDN
H3: Extent and perceived success of using forensic accounting services by other local authorities will positively influence the intention of English local authorities to use forensic accounting services	LAM
H4: Recommendations to effectively detect and prevent fraud by the professional bodies and associations will positively influence the intention of English local authorities to use forensic accounting services.	NBP
H5: Forensic accounting services providers through published report on frauds, promoted to market their services, and had expertise and capabilities which will positively influence the intention of English local authorities to use forensic accounting services	FSB
H6: Pressure from the stakeholders will positively influence the intention of English local authorities to use forensic accounting services	STH
H7: Perceived benefits of forensic accounting will positively influence the intention of English local authorities to use forensic accounting services	BFT
H8: Perceptions of the objectivity and credibility between forensic accountants and auditors will positively influence the intention of English local authorities to use forensic accounting services	PFA
H9: The costs of forensic accounting services will negatively influence the intention of English local authorities to use forensic accounting services	COF
H10: Perceived risks of forensic accounting will negatively influence the intention of English local authorities to use forensic accounting services	RIS
H11: Perceived severity of fraud will positively influence the intention of English local authorities to use forensic accounting services	SVF
H12: Perceived susceptibility of fraud will positively influence the intention of English local authorities to use forensic accounting services	PSF
H13: Strength of internal control will negatively influence the intention of English local authorities to use forensic accounting services	ICO
H14: Strength of the in-house counter fraud resources will negatively influence the intention of English local authorities to use forensic accounting services	CFT

5.7 Data Analysis Using Structured Equation Modelling (SEM) and Partial Least Square (PLS)

Structured Equation Modelling (SEM) was used for confirmatory factor analysis and hypothesis testing in this study. SEM known as a second generation multivariate data analysis technique simultaneously testing the measurement model and the structural model (Hair et al., 2014). SEM had been utilised by studies within business research including accounting (Lee et al., 2011) and within institutional context (e.g. Teo et al., 2003; Henderson et al., 2011; Son & Benbasat, 2007). SEM provides extensive, scalable, and flexible causal-modelling capabilities beyond those offered by first generation statistic techniques particularly in determining the conclusion of validity (Lowry & Gaskin, 2014, p. 125).

SEM assesses the properties of the scales employed to measure the theoretical constructs and estimates the hypothesized relationships among the constructs (Barclay et al., 1995). In other words, SEM is able to answer a set of interrelated research questions simultaneously through measurement and structural model. While other SEM methods present, the choice to use PLS was driven by several factors as outlined in Chapter 4 Section 4.7.2. Unlike the SEM techniques of LISREL and AMOS, PLS does not make the assumption of multivariate normality as non-parametric procedures is employed.

5.7.1 Sample size

Although PLS-SEM has flexibility on sample size requirement, Hair et al., (2014) suggested that the rule of thumb initiated by Barclay et al. (1995) can be considered. Based on the recommendation by Barclay et al. (1995, p. 292), the sample required will be based on the assumption below:

- i. *‘10 times the largest number of predictors of the formative construct (the most complex) or*
- ii. *10 times the largest number of predictors of the antecedent construct lead to endogenous construct in the structural model (regression)’*

The current thesis does not apply any formative constructs in the model as all indicators were considered as reflective constructs. Based on the second rule of thumb, the largest number of paths (theoretical model) in the structural model is 14, whilst the minimum sample size required is 140. Accordingly, the sample size of 139 nearly met the minimum requirement as per rule of thumb.

5.7.2 Model Assessment

In PLS, model estimation provides empirical measures of the relationships between the indicators and the constructs known as measurement model as well as between the constructs known as structural model (Hair et al., 2014). The empirical measures enable a comparison between the theoretical represented through measurement and structural model, and the reality represented by the sample data. Thus, the model assessment could determine how well the theory fits the data.

5.7.2.1 Assessment of the Measurement Model

According to Hair et al. (2014), *'the outer model or the measurement model identifies the relationships between the indicator variables and their corresponding construct (latent variable)'* (p. 110). The assessment of the measurement model for reflective constructs includes composite reliability, convergent validity and discriminant validity (Hair et al., 2014). In other words, the assessment of the measurement model is conducted before the assessment of the measurement model to indicate whether the characteristics of constructs were reliable and valid. As PLS-SEM does not provide an overall goodness of fit index, thus nonparametric evaluation criteria based on bootstrapping was used in the structural model (Hair et al., 2014). The 47 reflective indicators in the theoretical model were run using the SmartPLS 3.0 (Ringle et al., 2005). The output of the measurement model is shown in Appendix 8.

5.7.2.1.1 Convergent validity

Evaluating the convergent validity is conducted by analysing the indicator reliability, composite reliability (CR), item reliability of Cronbach's Alpha (CA) and Average Variance Extracted (AVE) (Chin, 1998; Fornell and Lacker, 1981; Hair et al., 2014). Table 5-22 presents the breakdown of the convergent validity's analysis. First, the indicator reliability based on the factor loading specifies the total variances that can be explained by the latent variable. The factor loading indicates the items loaded from a lower bound of 0.603 to an upper bound of 0.966. The loading specifies the correlation of the items with their respective construct (Nunnally, 1978), and at the same time determines the rate of random error in a particular construct. (Fornell & Larcker, 1981). Any factor loading less than 0.6 will be eliminated to maintain a high factor loading that will reduce the level of random error and to achieve convergent validity.

Table 5-22: Measurement of Convergent Validity

Constructs	Item	Loadings	AVE	CR	CA
1. Central government and related agencies (CGT)	ACM1	0.839	0.713	0.925	0.901
	CGT1	0.800			
	CGT2	0.879			
	CGT3	0.878			
	CGT4	0.821			
2. Media (MDN)	MDN1	0.938	0.796	0.951	0.935
	MDN2	0.946			
	MDN3	0.907			
	MDN4	0.935			
	MDN5	0.714			
3. Other local authorities (LAM)	LAM1	0.895	0.803	0.891	0.755
	LAM2	0.898			
4. Assoc. & prof. bodies (NBP)	NBP2	0.957	0.891	0.942	0.879
	NBP3	0.931			
5. Stakeholders (SHT)	SHT1	0.847	0.825	0.904	0.810
	SHT3	0.966			
6. Forensic accounting providers (FSB)	FSB1	0.794	0.630	0.836	0.710
	FSB2	0.907			
	FSB4	0.793			
7. Benefits of forensic accounting (BFT)	BFT1	0.949	0.803	0.924	0.877
	BFT2	0.871			
	BFT3	0.867			
8. Perceptions of forensic accountants (PFA)	BFT4	0.940	0.800	0.889	0.761
	BFT5	0.847			
9. Costs to acquire the services (COF)	COF1	0.914	0.764	0.906	0.845
	COF2	0.907			
	COF3	0.797			
10. Risk (RIS)	RIS2	0.955	0.774	0.872	0.736
	RIS3	0.797			
11. Perceived severity of fraud (SVF)	SVF1	0.603	0.798	0.854	0.794
	SVF2	0.791			
	SVF3	0.828			
	SVF4	0.712			
	SVF5	0.730			
12. Perceived fraud susceptibility (PSF)	PSF1	0.888	0.848	0.922	0.876
	PSF2	0.940			
	PSF3	0.849			
13. Internal control (ICO)	ICO1	0.961	0.720	0.918	0.821
	ICO2	0.954			
14. Counter fraud resources (CTF)	ICO4	0.811	0.824	0.885	0.813
	ICO5	0.889			
	ICO6	0.845			
15. Intention to use (INT)	INT1	0.961	0.916	0.956	0.909
	INT2	0.954			

The process of removal or elimination for items that is considered weak (based on factor loading) is standard procedure in social science studies particularly when newly developed scales are used (Hulland, 1999). The general recommendation for items removal is if the factor loading is below 0.70 (Hair et al., 2014). However, Hair et al. (2014) reiterate that factor loading between 0.40 to 0.70 can be retained if the removal of the factor loading does not affect the suggested threshold value of the composite reliability or the AVE. Initially, the first testing of PLS resulted in elimination of items: ASC3 (loading = 0.371), SHT4 (loading = 0.391), and ICON3 (loading = 0.530). When discarding the lower factor loadings, each construct had at least two minimum items that met the criteria suggested by Kline (1998). The refined measurement model was re-run and resulted in all factor loadings above 0.70 cut-off point except for SVF1 (loading=0.603). However, as suggested by Hair et al. (2014), item SVF1 is retained as the deletion of the item did not significantly increase either the composite reliability or the AVE.

The next measurement of the convergent validity is internal consistency reliability measured by the composite reliability (CR) and Cronbach's alpha (CA). Internal consistency, or the CR, refers as '*a second-generation procedure that measures reliability*' (Muthusamy, 2011, p.265). Compared to the traditional CA, the CR is more appropriate to be used as the CA tends to underestimate the internal consistency reliability (Hair et al., 2014). However, for the purposes of determining the internal consistency reliability, both the CR and the CA were used in this study. As indicated in Table 5-22, the CRs and CAs are greater than 0.70 indicating that they satisfied the requirement suggested by (Nunnally, 1978). Thus, these results indicate that all of the constructs had high internal consistency reliability to ensure the reliability of the measurement model.

Finally, the AVE, which measured the variance in a particular item explained by a particular construct (Fornell & Larcker, 1981), is presented. Hair et al. (2014) argue that the AVE is similar to the concept of communality of a construct. The minimum value of the AVE according to the rule of thumb is 0.50 (Fornell & Larcker, 1981; Nunnally, 1978). Table 5-22 indicates that the value of AVE is from the lowest 0.543 for Severity (SVF) to the highest 0.916 for Intention (INT) that indicated it met the minimum requirement of the AVE. In summary, the reflective constructs satisfied all criteria for indicator reliability, internal consistency, and the AVE, in support of convergent validity.

5.7.2.1.2 Discriminant Validity

According to Hair et al. (2014) discriminant validity correspond to *'the extent to which a construct is empirically distinct from other constructs or, in other words, the construct measures what it is intended to measure'* (p. 112). By achieving the requirement of the discriminant validity, a construct is considered unique and captures phenomena not represented by other constructs in the model. Barclay et al. (1995) suggested two measures of discriminant validity for the reflective constructs: average variances extracted (AVE) analysis, and cross loading matrix evaluation.

The AVE analysis based on the Fornell-Lacker criterion (Hair et al., 2014) compares the square root of the AVE values with the latent variable correlations. In order to satisfy the requirement of the discriminant validity, Fornell & Larcker (1981) recommend to compare the square root of AVE with the squared correlations between the latent constructs, in which the value of the square root of AVE is higher than the squared correlations. As a result, a construct is considered to share more variance with its associated indicators than with any other construct (Hair et al., 2014). The results obtained from the AVE analysis are shown in Table 5-23. From this analysis, all the reflective constructs are more strongly related to their own measures than to other constructs.

Table 5-23: AVE Analysis and the Correlation between the Constructs

Construct	BFT	PFA	CGT	COF	FSB	ICO	CTF	INT	MDN	LAM	NBP	PSF	RIS	SHT	SVF
BFT	<i>0.896</i>														
PFA	0.204	<i>0.895</i>													
CGT	0.337	0.307	<i>0.844</i>												
COF	-0.302	-0.140	-0.227	<i>0.874</i>											
FSB	0.279	0.104	0.163	-0.138	<i>0.794</i>										
ICO	-0.104	-0.284	-0.110	0.174	-0.051	<i>0.921</i>									
CTF	-0.099	-0.218	-0.068	-0.083	0.063	-0.131	<i>0.849</i>								
INT	0.465	0.372	0.481	-0.395	0.210	-0.224	-0.222	<i>0.957</i>							
MDN	0.166	0.173	0.182	-0.055	0.325	-0.025	-0.074	0.228	<i>0.892</i>						
LAM	0.234	0.181	0.279	-0.099	0.182	-0.088	-0.007	0.394	0.179	<i>0.896</i>					
NBP	0.035	0.168	0.211	0.064	0.171	-0.055	-0.002	0.088	0.447	0.110	<i>0.944</i>				
PSF	0.170	-0.021	0.113	-0.089	0.071	0.107	0.014	0.210	0.086	0.138	0.056	<i>0.893</i>			
RIS	-0.004	-0.094	-0.023	0.026	0.014	0.059	0.159	-0.112	-0.129	0.051	-0.047	0.040	<i>0.880</i>		
SHT	-0.074	0.055	0.053	0.123	0.160	0.058	-0.031	0.050	0.192	0.040	0.197	-0.017	0.120	<i>0.909</i>	
SVF	-0.136	-0.150	-0.125	-0.035	-0.084	0.112	0.169	-0.096	-0.028	0.027	0.023	0.026	0.278	-0.116	<i>0.737</i>

(The square roots of the AVEs are displayed on the diagonal in bold and italics)

The final measurement of discriminant validity is examining the cross loading matrix. To meet the criteria, the loading value of a particular construct need to be higher than their loading value in a different set of constructs or the cross loadings, providing further evidence of discriminant validity (Hair et al., 2014). Table 5-24 indicates that the loading value for all items measured (within the construct) were higher than the loading items measured (in other constructs). Thus, overall discriminant validity was achieved with the PLS-SEM analysis.

Table 5-24: Cross Loading Matrix

	BFT	PFA	CGT	COF	FSB	ICO	CTF	INT	MDN	LAM	NBP	PSF	RIS	SHT	SVF
ACM1	0.326	0.279	0.839	-0.251	0.189	-0.121	0.005	0.336	0.210	0.224	0.224	0.049	0.034	0.046	-0.088
BFT1	0.949	0.120	0.356	-0.294	0.263	-0.082	-0.060	0.457	0.154	0.234	-0.011	0.177	0.014	-0.028	-0.157
BFT2	0.871	0.208	0.259	-0.227	0.188	-0.083	-0.116	0.407	0.078	0.239	0.064	0.177	0.040	-0.104	-0.071
BFT3	0.867	0.233	0.284	-0.289	0.303	-0.119	-0.094	0.382	0.220	0.151	0.048	0.097	-0.072	-0.073	-0.135
BFT4	0.245	0.940	0.326	-0.147	0.168	-0.246	-0.197	0.391	0.184	0.192	0.146	-0.026	-0.085	0.019	-0.135
BFT5	0.091	0.847	0.202	-0.095	-0.021	-0.273	-0.197	0.251	0.114	0.120	0.161	-0.009	-0.084	0.097	-0.136
CGT1	0.297	0.289	0.800	-0.234	0.164	-0.085	0.054	0.310	0.110	0.306	0.135	0.021	0.019	0.000	-0.067
CGT2	0.270	0.242	0.879	-0.170	0.114	-0.104	-0.130	0.498	0.168	0.202	0.151	0.133	-0.086	0.098	-0.147
CGT3	0.296	0.300	0.878	-0.199	0.092	-0.133	-0.067	0.465	0.135	0.208	0.190	0.181	-0.052	-0.016	-0.145
CGT4	0.247	0.196	0.821	-0.128	0.165	-0.008	-0.100	0.365	0.149	0.274	0.201	0.043	0.029	0.089	-0.054
COF1	-0.307	-0.118	-0.249	0.914	-0.158	0.215	-0.063	-0.391	-0.092	-0.141	0.032	-0.108	0.036	0.088	0.035
COF2	-0.306	-0.168	-0.204	0.907	-0.136	0.105	-0.068	-0.340	-0.029	-0.113	0.131	-0.039	0.001	0.096	-0.047
COF3	-0.162	-0.078	-0.129	0.797	-0.054	0.124	-0.092	-0.298	-0.012	0.012	0.003	-0.084	0.030	0.147	-0.098
FSB1	0.260	0.018	0.126	-0.153	0.794	-0.036	0.081	0.163	0.270	0.154	0.136	0.114	0.041	0.022	-0.100
FSB2	0.215	0.044	0.062	-0.080	0.795	-0.072	0.049	0.139	0.228	0.178	0.105	0.097	0.041	0.182	-0.059
FSB4	0.193	0.166	0.182	-0.092	0.793	-0.021	0.024	0.190	0.270	0.112	0.158	-0.022	-0.036	0.176	-0.045
ICO1	-0.094	-0.336	-0.106	0.132	-0.042	0.916	-0.115	-0.200	-0.019	-0.098	-0.060	0.051	0.065	0.042	0.150
ICO2	-0.098	-0.192	-0.097	0.187	-0.052	0.926	-0.126	-0.212	-0.027	-0.066	-0.043	0.144	0.043	0.064	0.060
ICO4	-0.138	-0.128	-0.017	-0.063	0.082	-0.162	0.811	-0.129	-0.064	0.051	-0.018	-0.030	0.120	0.054	0.101
ICO5	-0.036	-0.193	-0.065	-0.090	0.032	-0.146	0.889	-0.235	-0.077	-0.072	-0.035	0.055	0.160	-0.148	0.125
ICO6	-0.110	-0.222	-0.079	-0.052	0.062	-0.030	0.845	-0.174	-0.043	0.040	0.054	-0.015	0.116	0.077	0.203
INT1	0.447	0.390	0.455	-0.416	0.187	-0.257	-0.232	0.961	0.194	0.399	0.048	0.171	-0.088	0.042	-0.090
INT2	0.443	0.319	0.467	-0.338	0.216	-0.169	-0.191	0.954	0.245	0.353	0.123	0.233	-0.128	0.055	-0.094
LAM1	0.220	0.170	0.256	-0.140	0.193	-0.103	0.005	0.350	0.128	0.895	0.119	0.193	0.112	-0.012	0.085
LAM2	0.200	0.155	0.244	-0.038	0.134	-0.056	-0.018	0.356	0.192	0.898	0.079	0.056	-0.020	0.083	-0.036
MDN1	0.161	0.182	0.138	-0.081	0.310	-0.073	-0.086	0.238	0.938	0.176	0.433	0.069	-0.150	0.230	-0.065
MDN2	0.191	0.193	0.208	-0.031	0.285	-0.016	-0.112	0.230	0.946	0.165	0.391	0.058	-0.081	0.187	-0.085
MDN3	0.119	0.132	0.139	-0.085	0.321	-0.022	-0.027	0.195	0.907	0.196	0.453	0.096	-0.178	0.196	0.007
MDN4	0.159	0.180	0.207	-0.013	0.357	-0.045	-0.041	0.206	0.935	0.129	0.434	0.044	-0.113	0.133	-0.008
MDN5	0.091	0.038	0.108	-0.028	0.132	0.102	-0.049	0.120	0.714	0.132	0.249	0.163	-0.028	0.075	0.087

	BFT	PFA	CGT	COF	FSB	ICO	CTF	INT	MDN	LAM	NBP	PSF	RIS	SHT	SVF
NBP2	0.030	0.140	0.175	0.044	0.226	-0.038	-0.038	0.091	0.442	0.067	0.957	0.089	-0.054	0.193	0.054
NBP3	0.038	0.183	0.230	0.081	0.080	-0.071	0.043	0.073	0.398	0.152	0.931	0.007	-0.033	0.177	-0.018
PSF1	0.110	0.024	0.028	-0.047	0.069	0.126	0.027	0.182	0.047	0.122	0.029	0.888	0.094	-0.065	0.070
PSF2	0.208	-0.046	0.167	-0.105	0.056	0.080	-0.011	0.230	0.087	0.127	0.016	0.940	-0.011	0.028	0.002
PSF3	0.116	-0.035	0.091	-0.084	0.073	0.085	0.034	0.125	0.106	0.123	0.145	0.849	0.038	-0.024	-0.005
RIS2	-0.046	-0.081	-0.024	0.007	0.025	0.100	0.149	-0.122	-0.105	0.058	-0.050	0.052	0.955	0.102	0.371
RIS3	0.082	-0.092	-0.016	0.055	-0.011	-0.043	0.134	-0.060	-0.140	0.020	-0.028	0.004	0.797	0.121	0.006
SHT1	-0.085	0.061	0.058	0.052	0.089	0.005	-0.031	0.027	0.161	0.049	0.056	-0.012	0.100	0.847	-0.069
SHT3	-0.061	0.046	0.045	0.144	0.177	0.078	-0.027	0.056	0.187	0.032	0.244	-0.018	0.117	0.966	-0.126
SVF1	-0.046	-0.043	0.047	-0.093	-0.062	0.095	0.149	-0.027	0.062	0.077	0.058	0.063	0.167	-0.139	0.603
SVF2	-0.119	-0.123	-0.098	0.038	-0.126	0.198	-0.028	-0.090	-0.056	-0.013	-0.062	0.002	0.242	-0.060	0.791
SVF3	-0.076	-0.028	-0.069	-0.104	0.013	0.069	0.131	-0.057	-0.083	0.049	0.048	0.017	0.284	-0.113	0.828
SVF4	-0.072	-0.057	-0.121	-0.037	-0.037	0.047	0.068	-0.062	-0.034	0.049	0.081	0.031	0.214	-0.071	0.712
SVF5	-0.141	-0.221	-0.132	-0.015	-0.067	-0.003	0.325	-0.085	0.041	-0.003	0.022	0.018	0.131	-0.094	0.730

5.7.2.2 Assessment of the Structural Model

The final stage of SEM is the structural model to determine the significance of the constructs and the explanatory power of the model. Based on the measurement model that yielded the confirmation of good psychometric properties, the structural model was assessed using Smart PLS 3.0. PLS will estimate the variance associated with endogenous construct (dependent variable). In the structural model of PLS, non-parametric resampling procedure known as bootstrap is used to examine the accuracy of the estimates and to generate significance tests of the results. Following recommendation by Hair et al. (2014), the bootstrapping option was run using 5000 subsamples to compute standard errors and significance levels. The results from the bootstrap produced the t-value. The application of the t-value is the same as the t-test, which to determine the significance on the relationship of the hypotheses.

The R^2 is '*interpreted in a similar way as in any multiple regression analysis*' (Muthusamy, 2011, p. 275) that represents the proportion of the dependent variable's variance explained by the independent (exogenous) variables or a measure of model's predictive accuracy or the exploratory power of the model (Hair et al., 2014, p. 133). The rule of thumb to determine the acceptable value of R^2 are: 0.75 (substantial), 0.50 (moderate), and 0.25 (weak) (Hair et al., 2014). Falk & Miller (1992) recommend R^2 for endogenous variable be equal to or more than 0.10. The research model reaches statistical significance if p-value, is denoted as $p=.000$; this really means $p<0.0005$ (Pallant, 2011). For this study, all statistical tests were assessed at 0.05 level of significance ($p\leq 0.05$) using two-tailed t-tests. As for the t-value, if the value is 1.96 and above, it indicates that the influence (or relationship) is significant at $p\leq 0.05$ (Pallant, 2011). In addition, to examine the directions (negative or positive) between independent and dependent variables of this study, the signs (- or +) at the front of path coefficients (β) were

also inspected. Path coefficients represent *'the hypothesized relationships linking the constructs with coefficients closer to +1 representing strong positive relationships and coefficient closer to -1 indicating strong negative relationship'*, (Hair et al., 2014, p. 114). The value of R^2 and (β) is taken during the measurement model as shown in Appendix 8. The t-value is derived in the structural model as shown in Appendix 11.

Following Fichman, Hall, & Ave (1997), three models were estimated: the full model (both theoretical variables and control variables) as shown in Appendix 9, the empirical/theoretical model (theoretical variables only) as shown in Appendix 8, and the control model (control variables only) as shown in Appendix 11. The control model as depicted in Appendix 10 is used to provide a benchmark for assessing the additional impact of the variables in the theoretical model. These three models were estimated to provide a basis for assessing the true impact of the theoretical variables and to rule out alternative explanations. A comparison between the full model and the control models as shown in Table 5-25 indicates that the full model explains a substantive incremental variance of (57.8% - 16.9%) 40.9%. In contrast, the incremental variance derived by comparing the full model and the theoretical model amounts to a mere (57.8% - 53.1%) 4.7%. These results suggest that the theoretical model is substantive enough to explain a large proportion of the variance predisposition toward the intention to use forensic accounting services.

As can be seen from Table 5-26, only one of the control variables, the size of internal audit is statistically significant both in the full model (IAT: $\beta = 0.185$, $p < 0.05$) and in the control model (IAT: $\beta = 0.405$, $p < 0.01$). Additionally, including control variables in the full model resulted the perceived severity of fraud (PSF: $\beta = 0.096$) to be statistically not significant compared in the empirical/theoretical model (PSF: $\beta = 0.123$, $p < 0.05$) that indicates having a significant

impact on the intention to use forensic accounting services. The results suggest that the control variables play an important role in the full model.

Table 5-25: Comparison of the Structural Models-Summary

Results	<u>Model 1</u> Full Model (N=139)	<u>Model 2</u> Control Variables Only (N=139)	<u>Model 3</u> Empirical (Theoretical) Variables Only (N=139)
Number of paths in the model	21	7	14
Number of significant paths in the model	6	1	6
Variance Explained (R^2)	57.8%	16.9%	53.1%

Table 5-26: Evaluation of the Structural Models- Results of the PLS Analysis: Path Coefficients

Constructs		Path Coefficients		
		<u>Model 1</u> Full Model (N=139)	<u>Model 2</u> Control Variables Only (N=139)	<u>Model 3</u> Empirical (Theoretical) Variables Only (N=139)
1.	CGT	0.228*		0.231*
2.	MDN	0.039		0.051
3.	LAM	0.192*		0.205*
4.	NBP	-0.093		-0.056
5.	SHT	0.096		0.084
6.	FSB	0.029		0.019
7.	BFT	0.199*		0.195*
8.	PFA	0.088		0.108
9.	COF	-0.180*		-0.228*
10.	RIS	-0.108		-0.086
11.	PSF	0.096		0.123*
12.	SVF	0.037		0.044
13.	ICO	-0.113		-0.133
14.	CFT	-0.199*		-0.189*
15.	LAS	-0.034	-0.023	
16.	IAT	0.185*	0.405**	
17.	CFR	-0.071	0.038	
18.	T_COUNTY	-0.018	-0.158	
19.	T_UNITARY	-0.025	-0.031	
20.	T_METROPOLITAN	0.020	-0.020	
21.	T_LONDON	0.122	0.178	
Variance Explained (R^2) in Intention to Use		57.8%	16.9%	53.1%

Path significance:

** $p < 0.001$

* $p < 0.005$

5.7.2.2.1 Coefficient of Determination

The result of the R^2 (0.578) in the full model indicates that 57.8% of the variance of the intention to use forensic accounting services can be explained by the research model based on the 21 exogenous variables, including control variables.

5.7.3 Hypotheses Testing

The results from the PLS data analysis reveal that the exploratory power of the organisational intention model is satisfactory at $R^2 = 57.8\%$. The standardized path coefficient (β) determines the positive and negative direction of the hypothesised relationship while the t-values determine whether the relationships of variables are significant or not. The next section details the results for each hypothesis. The results of the hypotheses testing were grouped based on: 1) Institutional variables (coercive, mimetic, and normative pressures): 2) Forensic accounting perceptions factors: 3) Fraud perceptions factors: and 4) Internal factors.

5.7.3.1 Hypotheses Based on the Coercive Pressures

The first hypothesis test was the influence of central government and the related agencies in increasing the intention to use forensic accounting services among English local authorities. It was hypothesized that central government's action and the reports issued by the related agencies would have a significant positive influence on the intention to utilise forensic accounting services. The evidence from the analysis indicates that central government and related agencies (H1: $\beta = 0.228$, t-value = 2.842, $p < 0.05$) have a positive and significant effect.

Therefore, H1 is supported that central government and related agencies influence the intention to use forensic accounting services among English local authorities.

Hypothesis H2 tests the influence of media through television, radio and social media with the intention to use forensic accounting services by English local authorities. In contrast to H1, the evidence indicated that media (H2: $\beta = 0.039$, $t\text{-value} = 0.630$) has a positive effect but is not statistically significant. Based on the finding, it is argued that media does not have a significant influence on the intention to use forensic accounting services by English local authorities. Therefore, H2 has to be rejected.

Overall, only one of the hypotheses under coercive pressures is supported (H1). The summary of the results for hypotheses H1 and H2 is summarised in Table 5-27 below.

Table 5-27: Summary of Hypotheses Based on Coercive Pressures

Hypothesis	Standard path coefficient (β)	t- value	Outcome
H1: Directives, rules, and policies (including initiatives and action plan) from central government and related government agencies will positively influence the intention of English local authorities to use forensic accounting services	0.228	2.842	Supported
H2: News of fraud highlighted by the media will positively influence the intention of English local authorities to use forensic accounting services	0.039	0.630	Not Supported

5.7.3.2 Hypothesis Based on the Mimetic Pressures

Hypothesis H3 tests the influence of other local government that used and received a high rate of success in using forensic accounting services to influence a local authority's intention to use the services. The finding indicated that (H3: $\beta = 0.192$, $t\text{-value} = 2.895$, $p < 0.05$) has a positive influence and significant effect. This suggests that the higher perceived use and success of forensic accounting services by local authority, the level of intention to use forensic accounting services also increases. The finding also shows that the $t\text{-value}$ (2.895) for H3 is the highest within the institutional variables, which indicates that mimetic pressure is the most influential factor on the intention to use forensic accounting services compared to the coercive and normative pressures. Table 5-28 summarised the results of the hypothesis testing H3.

Table 5-28: Summary of Hypothesis Based on the Mimetic Pressures

Hypothesis	Standard path coefficient (β)	t- value	Outcome
H3: Extent and perceived success of using forensic accounting services by other local authorities will positively influence the intention of English local authorities to use forensic accounting services	0.192	2.895	Supported

5.7.3.3 Hypotheses Based on Normative Pressures

The results obtained from the PLS analysis of the normative pressures are presented in Table 5-29. No hypotheses under the normative pressures (H4, H5, and H 6) are supported. The findings show that the professional bodies and associations (H4: $\beta = -0.093$, $t\text{-value} = 1.162$), forensic accounting services providers (H5: $\beta = 0.029$, $t\text{-value} = 0.478$), and stakeholders (H6: $\beta = 0.096$, $t\text{-value} = 1.058$). Surprisingly, the result of hypothesis H4 indicates a negative direction that suggests the higher participation of the professional bodies and association, the

lower intention to use forensic accounting services among English local authorities. It can therefore be assumed that the role of the professional bodies and associations, forensic accounting services providers, and stakeholders were not significant factors in the decision to utilise forensic accounting services.

Table 5-29: Summary of Hypotheses Based on Normative Pressures

Hypothesis	Standard path coefficient (β)	t- value	Outcome
H4: Recommendations to effectively detect and prevent fraud by the professional bodies and associations will positively influence the intention of English local authorities to use forensic accounting services	-0.093	1.162	Not Supported
H5: Forensic accounting services providers through published report on frauds, promoted to market their services, and had expertise and capabilities will positively influence the intention of English local authorities to use forensic accounting services	0.029	0.478	Not Supported
H6: Pressures from stakeholder will positively influence the intention of English local authorities to use forensic accounting services	0.096	1.058	Not Supported

5.7.3.4 Hypotheses Based on Forensic Accounting Perceptions Factors

Hypothesis H7 examines the perceived benefits of forensic accounting services to influence the intention to use the services. It can be seen from Table 5-30 that the evidence from the analysis indicates that the perceived benefits of forensic accounting services (H7: $\beta = 0.199$, t-value = 2.714, $p < 0.05$) have a positive and significant effect. The finding also indicates that the t-value (2.714) for H7 is the highest among the indicators other than institutional variables. This strong evidence implies that when the perceived benefits of forensic accounting services are higher, local authorities in England had greater intention to utilise forensic accounting services.

Hypothesis H8 that emerged after conducting the exploratory factor analysis posits that the perceptions of the objectivity and credibility between forensic accountants and auditors will positively influence the intention of English local authorities to utilise forensic accounting services. The result shows that (H8: $\beta = 0.088$, $t\text{-value} = 1.216$) has a positive direction but not statistically significant. Therefore, H8 is rejected.

Hypothesis H9 tests the impact of costs to acquire the services towards intention to use forensic accounting services. The evidence from the analysis indicates that financial costs (H9: $\beta = -0.180$, $t\text{-value} = 2.451$, $p < 0.05$) have a negative and significant effect. The finding indicates that financial costs are a crucial consideration that influences local authorities' intention to use forensic accounting services to detect and prevent fraud.

Hypothesis H10 posits that the perceived risks had negative influence on the level of intention of English local authorities to use forensic accounting services. The result shows that (H8: $\beta = -0.108$, $t\text{-value} = 1.249$) has a negative direction but not statistically significant. Therefore, H10 is rejected.

Table 5-30: Summary of Hypotheses Based on Forensic Accounting Perceptions Factors

Hypothesis	Standard path coefficient (β)	t- value	Outcome
H7: Perceived benefits of forensic accounting will positively influence the intention of English local authorities to use forensic accounting services	0.199	2.714	Supported
H8: Perceptions of the objectivity and credibility between forensic accountants and auditors will positively influence the intention of English local authorities to use forensic accounting services	0.088	1.216	Not Supported
H9: Transaction costs to use forensic accounting services will negatively influence the intention of	-0.180	2.451	Supported

Hypothesis	Standard path coefficient (β)	t- value	Outcome
English local authorities to use forensic accounting services			
H10: Perceived risks of using forensic accounting services will negatively influence the intention of English local authorities to use forensic accounting services	-0.108	1.249	Not Supported

5.7.3.5 Hypotheses Based on Fraud Perceptions Factors

Hypothesis H11 and H12 were proposed to test the perceived severity of fraud and the perceived susceptibility of fraud to positively influence the intention in using forensic accounting services by English local authorities. The results of the hypotheses testing are summarised in Table 5-31. The evidence from the analysis indicates the perceived severity of fraud (H11: $\beta = 0.036$, t-value = 0.455). The finding for the perceived susceptibility of fraud (H12: $\beta = 0.102$, t-value = 1.570). The corollaries for both hypotheses H11 and H12 are supported, but statistically not significant and are rejected.

Table 5-31: Summary of Hypotheses Based on Fraud Perceptions Factors

Hypothesis	Standard path coefficient (β)	t- value	Outcome
H11: Perceived severity of fraud will positively influence the intention of English local authorities to use forensic accounting services	0.037	0.455	Not Supported
H12: Perceived susceptibility of fraud will positively influence the intention of English local authorities to use forensic accounting services	0.096	1.570	Not Supported

5.7.3.6 Hypotheses Based on Internal Factors

Table 5-32 provides the summary of the statistic for the hypotheses testing under internal factors. Hypothesis H13 and hypothesis H14 test the strength of internal control systems and the strength of the in-house counter fraud resources to negatively influence the intention to use forensic accounting services. The evidence from the analysis indicates that the strength of internal control systems (H13: $\beta = -0.113$, $t\text{-value} = 1.669$) has a negative direction and not significant. The result of H14 that emerged as a new construct after exploratory factor analysis shows that the strength of the in-house counter fraud resources (H9: $\beta = -0.199$, $t\text{-value} = 2.547$, $p < 0.05$) has a negative and significant effect. These findings indicate that the greater the strength of counter fraud resources, the level of intention to use forensic accounting services is reduced, while there is no evidence to support the strength of the internal control systems to influence the intention to use the services among English local authorities.

Table 5-32: Summary of Hypotheses Based on Internal Factors

Hypothesis	Standard path coefficient (β)	t- value	Outcome
H13: Strength of internal control will negatively influence the intention of English local authorities to use forensic accounting services	-0.113	1.669	Not Supported
H14: Strength of the in-house counter fraud resources will negatively influence the intention of English local authorities to use forensic accounting services	-0.199	2.547	Supported

5.8 Summary

The first part of data analysis is related to descriptive statistic such as on the profile of local authorities, the extent of using forensic accounting services, the types of services used and the level of satisfaction on the use of the services. The second part of the analysis involved factor analysis of exploratory factor analysis and confirmatory factor analysis. The confirmatory factor analysis assesses how well the hypothesized models fit the sample data based on the observed variables from the questionnaire. All of the measurement models were assessed and re-specified as necessary until acceptable levels are met. The results of the findings are discussed in the next chapter.

CHAPTER 6: FINDINGS AND INTERPRETATIONS

6.1 Introduction

The purpose of the study was to examine the extent of the use of forensic accounting services and to investigate the association of variables drawn from institutional theory and other important variables from the literature with the intention to use forensic accounting services to detect and prevent fraud by English local authorities. Accordingly, the three specific aims of the current study were:

- i. To identify the extent of using forensic accounting services to detect and prevent fraud by English local authorities.
- ii. To examine the perceptions of the English local authorities' officers towards forensic accounting.
- iii. To investigate the factors that influence the intention to use forensic accounting services in detecting and preventing fraud by English local authorities.

This chapter analyses the results from the analysis in relation to the research question in Chapter 1, including proposed hypotheses and conceptual framework in Chapter 3. It also links to the focus of the research related to forensic accounting services, fraud in local authorities presented in Chapter 2. The first section described the discussion of the results based on the research questions and proposed hypotheses. At the end, a summary of the chapter is presented.

6.2 Discussions of the Results

The discussions of the results consist of six sections. The first section discusses the extent of using forensic accounting services to detect and prevent fraud. The second section examined the perceptions towards the core skill/essential traits of forensic accountants. The next section discussed the determinant factors that contribute in the decision to utilise forensic accounting services to detect and prevent fraud. The fourth section highlights the phenomenon of the debate about forensic accounting services, followed by the results of hypotheses testing. Finally, discussions on the outcome of the proposed hypotheses are presented.

6.2.1 The Extent of Using Forensic Accounting Services to Detect and Prevent Fraud

The first research questions were: ‘To what extent local authorities utilised the services from forensic accounting providers?’ and ‘What types of forensic accounting services are used by English local authorities?’

This study found that almost a fifth (as outlined in Table 5.5) of the English local authorities surveyed had utilised forensic accounting services. These findings evidence the relevance and the existence of utilising external forensic accounting services within the public sector context, in which a ‘*significant minority*’ of local authorities used the services. However, the findings highlight the need for caution as those local authorities that did utilise the services might not continue to use the services in future. The utilisation of forensic accounting services among local authorities surveyed can be considered similar to other findings e.g. the recent report by PriceWaterhouseCoopers (2014b) that found 17% of organisations (mixed of companies and public sector) in the UK engaged a specialist forensic investigator. Other findings included EY (2003) which stated that only 20% of organisations (mainly private companies) worldwide

utilised forensic accounting services in fraud investigations, and PricewaterhouseCoopers (2006) stated that 38% of companies worldwide seek forensic accounting services. Thus, the extent of use is in keeping with other sectors in the UK.

A possible explanation regarding the finding of this study is that some local authorities had good internal counter fraud teams/resources in dealing with fraud so there is no necessity to acquire the services from the external providers. It is found that more than 70% of the local authorities surveyed in this study had their own in-house counter fraud (as described in Table 5.1). Further, more than 60% of the local authorities surveyed agreed on the statement that their local authority is able to retain or recruit people with necessary skills while more than half agreed that their local authority evaluates the strength of anti-fraud cultures regularly (as described in Table 5.13).

Additionally, this study provided empirical evidence, in which nearly 20% of the English local authorities surveyed had utilised forensic accounting services. As the extent of the forensic accounting utilised by local authorities is previously unknown (to the best of researcher knowledge) and according to the previous studies e.g. Carnes & Gierlasinski (2001); Huber (2012); Rezaee et al. (1992) had claimed that the demand for forensic accounting is increasing, there are limited academic studies to support the argument. Thus, given the context of the current study, it provides additional knowledge on the usage of forensic accounting services within the public sector.

This study demonstrated that the top five services used by local authorities in England were digital forensic (61.5%), fraud investigations together with asset tracing and recovery (46.2%) each, and fraud detection together with fraud risk management (42.3% each). Examples of

digital forensic included data mining, digital recovery, and software tools such as ACL, and Interactive Data Extraction and Analysis (IDEA) (McMullen & Sanchez, 2010). A digital forensic investigation commonly involved the extraction, processing/analysis and interpretation/reporting digital data (McKemmish, 1999), which required computer forensic skills and expertise (Bierstaker et al., 2006; McMullen & Sanchez, 2010). Fraud investigations work generally related to use investigative intelligence and analysis (experts in obtaining relevant information), forensic accounting/transaction analysis, computer forensic, fieldwork and interviews techniques (to interrogate witness or suspects), and reporting of investigation findings and subsequent actions (legal advice) involved (Porter & Crumbley, 2012; PricewaterhouseCoopers, 2008).

Asset tracing and recovery could involve a forensic review of books and financial records, computer forensic, interview of witness, preparation of report, and provide evidence in court (Jacobs, Ingram, & Wide, 2012). Among the techniques used in fraud detection are a comprehensive whistleblower program, data mining on suspicious transaction analysis (PricewaterhouseCoopers, 2008; Sharma & Kumar, 2012), and data-driven method (Albrecht & Albrecht, 2009). A comprehensive and effective fraud risk management consists of four phases; assess risks (identify the scope of analysis, profile the current arrangement), design (develop a range of program including controls to prevent, detect, and respond to fraud), implement (execute the strategy and process to implement new controls throughout organization), and evaluate (access current controls arrangement and compared with the best practices) (KPMG, 2006). Thus, forensic accounting services are significantly associated with investigations and recovery work with some prevention and detection.

These findings may help us to understand the issues of less use of computer forensic (Lane, 2011) among local authorities as the demand to acquire this type of service was the highest compared to other services. This study also discovered the increasing use of digital forensic between 2013 and 2014 (more than 60%). As the internal counter fraud within local authorities still does not have enough experience/expertise in using computer forensic examination (Lane, 2011), it is not surprising that local authorities sought this type of services from forensic accounting providers. Another explanation would be the increase of using digital technology across services and functions among local authorities (Audit Commission, 2014) and significant rise in cybercrime against public sector organisations (Mansfield-Devine, 2012; PricewaterhouseCoopers, 2014b) which in turn poses new fraud risks. An appropriate action, for example, would be providing more training and increasing the skills of computer forensic to the internal audit unit and in-house counter fraud resources.

This study also showed that fraud investigation and fraud detection were among the highest services in demand within the public sector context. The result of this study found that fraud risk management was frequently acquired within a 12 month period as depicted in Table 5-8. This finding suggested that, currently, local authorities took initiative to apply not only reactive approaches (historically) but also proactive approaches (such as fraud risk management) as suggested in the literature (Audit Commission, 2013; Gee et al., 2011), which required local authorities to review the counter fraud policy regularly due to significant changes in counter fraud arrangement (Audit Commission, 2013), and the need to improve fraud controls and process as the first line of defence in preventing fraud (Home Office, 2012). Reactive approach is used when reliance is placed on investigation after fraud happened while proactive approach is used on tools and methods before the incidence of fraud occurs to determine the fraud indicators or red flags (PricewaterhouseCoopers, 2008; Vonya Global, 2009).

The second research question was ‘What types of forensic accounting services providers are used by English local authorities?’ Surprisingly, this study found that in general, local authorities surveyed preferred to use other than the Big Four accounting firms (67%) despite the Big Four accounting firms being considered a major player of forensic accounting providers in the market (Rezaee, 2005). The category of the providers other than the Big Four accounting firms derived from the survey of this study consisted of the private legal firm such as Bond Solon, and other local authorities with specialist skills and internal audit outsourcing providers. However, the results should be interpreted with caution based on the number of local authorities that participated in the survey. A possible explanation for this might be that the cost to acquire the forensic accounting services from the Big Four accounting firms is relatively high (Apostolou & Crumbley, 2008) and is determined by the complexity and scale of fraud. For example, in the case of London Borough of Tower Hamlets, PwC was commissioned by the DCLG to conduct best value compliance inspection on various issues of governance including allegations of fraud, with the costs of investigation reportedly amounting to £1 million at local authorities’ costs for seven months’ work. However, using sector specific providers who specialise makes sense and may be part of the mimetic behaviour in the sector. Villadsen et al. (2010) analysed mimetic decision making to describe the situation where managers in municipal councils (Denmark) obtain information about other field members with the possible intent of imitating them. Their finding is consistent with findings by Frumkin & Galaskiewicz (2004) that stated bureaucratic public organisations are likely to imitate one another.

Additionally, the findings of the current study also show that costs to acquire forensic accounting services contributed to the factors in using forensic accounting services by English local authorities as described in the Section 5.7.3.4. The choices to use other than the Big Four accounting firms indicated that local authorities preferred to get services from providers with

whom they had close relationships e.g. other local authorities with specialist services and as part of outsourcing services. Hence, the market of forensic accounting services for local authorities is considered competitive.

On the other hand, there are four-fifths of respondents that do not use forensic accounting services which indicates it is not a valued or favoured service. Those that do are addressed in the third research question 'How satisfied are local authorities with the services received from forensic accounting services providers, and what are the levels of intention to continue using the services?' Overall, two thirds of local authorities surveyed (as indicated in Table 5.9) were satisfied with the services provided by both the Big Four and non-Big Four accounting firms. This result may be explained by the fact that forensic accounting services providers which were specialist in their field had sufficient knowledge, expertise, and skills while giving their services (Ramaswamy, 2005 and Digabriele, 2008). For instance, based on the top five types of services acquired presented in this study, forensic accounting services providers had capabilities and expertise in digital forensic, fraud investigation and detection, and fraud risk management. An implication of this is that forensic accounting services providers could play a key role in fraud detection and prevention (Muthusamy, 2011) within local authorities' context. This finding is consistent with a report by EY (2003) which stated that 88% were satisfied with the services delivered.

Contrary to the level of satisfaction discussed above, this study found that the majority of local authorities surveyed (62%) that used forensic accounting services were uncertain whether to continue to use the services. This inconsistency may be due to the fact that the decision to use forensic accounting services might involve some factors such as costs to acquire the services, the nature of fraud (very complex and 'unexpected' to occur), and the strength of internal

counter fraud resources. Another reason could be due to the lack of resources as a result of austerity measures introduced by central government (Fraud Advisory Panel, 2011). This study has shown that most of the respondents agreed that the austerity measures have had a negative impact on the resources available for counter fraud activities as mentioned in Table 5-13. In general, therefore, it seems that the decision to continue using forensic accounting services needs to be carefully considered although to some extent, the level of satisfaction on their work was high.

Within the management consultant perspective, Werr & Styhre (2002), there are two views of the consultant-client relationship, referred to as functionalist image: client as buyer and critical image: client vs victim. Applying the consultant-client relationship in the context of demand and supply of forensic accounting services, the decision to use forensic accounting services can be described as follow.

Table 6-1: Consultants-Client Relationship: Demand and Supply of Forensic accounting services

	Functionalist image: Client as buyer	Critical image: client as victim
Why use forensic accounting services?	Knowledge, specialized skills such as utilizing digital forensic or lack of in house resources and capabilities	Cognitive and socio-psychological needs emerging from the characteristics of the managerial task
Nature of the client	Probably mimicking and based on recommendations by local authorities	Naive, anguished victim of consultant's persuasive strategies
Nature of the forensic accounting provider	Preferred to use within the sector and shared services among local authorities rather than the Big Four firms	Impressions that the need to use their services based on their own published reports
Nature of the client-consultant relationship	Contractual, arm's length relationship with the client in control	Exploitive relationship with the consultant in control
Limitations to the client-consultant relationship	Consultant's superior knowledge and expertise	Dependence on repeat sales, character of inter-firm and managerial structures, client's knowledge and expertise

(Source adapted from: Werr & Styhre, 2002)

6.2.2 Perceptions towards the Core Skill/Essential Traits of Forensic Accountants

The fourth research question was ‘How are the core skills/essential traits of forensic accountants being perceived by local authorities’ officers?’

This study indicated that both internal auditors and counter fraud managers agreed that analytical/critical thinking, investigative ability, auditing skills, investigative intuition, and effective oral communication are among the important skills and essential traits that forensic accountants are expected to possess (as shown in Table 5-11 and Table 5-12). This finding is important as internal auditors need to distinguish these core skills/essential traits when conducting audit works and counter fraud activities. As indicated by HM Treasury (2012), it is not a primary role of internal audit to detect fraud (p. 7) as the provision of assurance services is the primary role for internal audit in the UK public sector (CIPFA, 2014. p. 5). However, there are internal auditors that are involved in fraud investigation in local authorities (PricewaterhouseCoopers, 2011; Lane, 2011; Levi et al., 2007). In their report, PricewaterhouseCoopers (2011) acknowledged that internal audit can counter fraud effectively using appropriate techniques such as data analytics. For instance, a local authority may be able to save a substantial amount of money when their internal audit team applied an application known as Continuous Transaction Monitoring (CTM), which acts as an early warning system for the management by identifying predictive indicators of fraud (PricewaterhouseCoopers, 2011). If internal auditors were assigned to counter fraud, then they have to obtain sufficient skills, competencies, including knowledge of fraud schemes, investigation techniques and laws (The Institute of Internal Auditors (IIA), 2009). Therefore, the counter fraud work by internal auditors may be at risk of not being able to detect fraud if internal auditors do not have

specialists' investigation knowledge, training or skills in fraud investigation (Lane, 2011). Hence, improving internal auditors' ability to counter fraud through continuing professional development (CIPFA, 2014) will lend technical competence and credibility to deter fraud.

It can therefore be assumed that to become a good forensic accountant and meet the expectations of the customer it is crucial to acquire analytical/critical thinking. Based on the previous studies (e.g. Davis et al., 2010; Digabriele, 2008; Messmer, 2004), the findings of this study confirmed that analytical/critical thinking is the most important core skill/essential trait to become effective forensic accountants. According to Kranacher et al. (2011), critical thinking *'sometimes referred to as lateral thinking or thinking "outside the box", is a disciplined approach to problem solving'* (p. 9) that enables understanding of the "big picture" (Peterson, 2003, p. 265). For instance, applying critical thinking skills within a professional context required synthesizing and applying appropriate fraud causation elements to identify and prevent fraud with an emphasis on unstructured problem solving (Dominey et al., 2010) and the ability to use both financial and non-financial data to tell the complete story of who, what, when, where, how, and why that can be used by prosecutors, defence lawyers and juries to understand the full scheme under investigation (Kranacher et al., 2011, p. 25).

Critical thinking skills are essential to understand, apply and adapt concepts in a variety of contexts and circumstances as business organisations continue to evolve in response to new information technology and meet challenges such as risks to fraud (Bawaneh, 2011; Schleifer & Greenawalt, 1996). As organisations are not immune to fraud, dependence on effective fraud investigators is essential, in which investigation of fraud requires strong critical thinking. Among the concerns in counter fraud activities within English local authorities was the argument that the fraud investigation was undertaken by internal auditors, in which not all

internal auditors are well equipped to conduct fraud investigations (Lane, 2010). Nevertheless, both internal auditors (if undertaking counter fraud work) and counter fraud specialists within local authorities require specialist investigation training or skills (Lane, 2011) to become effective in fraud investigation. Professional bodies within local authorities such as CIPFA and Alarm also suggested the importance of adequate investment in anti-fraud function, professionalising investigators and intelligence development (Alarm, 2007; CIPFA, 2008b). Singleton et al. (2006) recommended that fraud auditors must have specific skills, knowledge and experience through tailored training such as interviewing skills, knowledge of criminal law and evidence gathering technique.

On the other hand, the finding of this study found inconsistency in the perceptions of core skills/essential traits of forensic accountants among the group of respondents. As indicated in Table 5-12, despite common core skills/essential traits acknowledged by all three respondent groups, the Chief Executive/Managing Director, the Director of Finance ranked investigative ability as the most important. The Chief Executive/Managing Director ranked auditing skills as the second important followed by analytical/critical thinking. Contrarily, the Director of Finance ranked analytical/critical thinking as the second important followed by auditing skills. Problem solving and research skills were among the top five ranked by the Chief Executive/Managing Director and Director of Finance but were not ranked top five by internal auditors. Analytical/critical thinking was ranked first by the internal auditors/counter fraud managers followed by investigative ability and motivation.

The discrepancies of the perceptions towards forensic accountants among the respondents' group, however, can be explained as follows. The findings indicated that the Chief Executive/Managing Director and the Director of Finance, as senior management in local

authorities, perceived the abilities or skills in investigation, auditing and critical thinking as the top priority to counter fraud effectively. One of the reasons could be the expectation of general public, employees, regulators, government bodies and other stakeholders who want to see senior management taking the lead in evaluating the organisation's counter fraud activities. In having priority that counter fraud activities are in place, the senior management is able to minimize its own liability and deter future fraud activity (EY, 2009) that can protect public fund. The interpretation of these findings, however, should be treated with caution due to limited number of responses from the two groups.

From the perspective of internal auditors/counter fraud managers (as investigators), motivation was considered important besides investigation, intuition and critical thinking. According to Brooks and Labelle (2006) motivation is one of the important attributes that should be possessed by a forensic accountant in Canada- the term used is investigative and forensic accountants (IFA). For example, it is difficult to collect evidence of a fraud as the evidence sometimes is not visible. As a result, *'extraordinary sensitivity to barely visible red flags is essential, as is the diligent extraction or teasing out of evidence from often obtuse or reluctant sources'* (Brooks & Labelle, 2006, p. 293). Thus, attributes such as critical thinking and investigative intuition, are useful to uncover and find the evidences. In addition, a proper investigative mindset based on an understanding of motivations and patterns behaviour will lead to proactive examinations for potential frauds that go much deeper than normal audit work (Brooks & Labelle, 2006). The implication of the current study finding is that if internal auditors/counter fraud managers applied those mentioned attributes, then their practices on counter fraud could be considered in the right direction.

The current findings extend our knowledge of understanding the requirement to become effective forensic accountants by having a different set of skills within the UK public sector as

the studies mentioned above had been carried out mostly in the US, not specifically in the public sector context.

6.2.3 Determinants that Influence the Intention to Use Forensic Accounting Services to Detect and Prevent Fraud

The fifth research question was ‘Which factors have significant influence on the intention to use forensic accounting services?’ This followed by the sixth research question which was ‘How strong are the significance of the factors that influence the intention to use forensic accounting services?’

To address the fifth and sixth questions, this study found that there were five out of fourteen factors influencing the intention to use forensic accounting services as discussed in Section 5.7.3 and depicted in Figure 6-1. The five factors that were significant in influencing the intention to use forensic accounting by English local authorities were: central government and related agencies (coercive pressures), other local authorities (mimetic pressures), perceived benefits of forensic accounting and costs to acquire forensic accounting services (forensic accounting perception factors), and the strength of the in-house counter fraud resources (internal factors). The empirical results indicated the impact of two institutional isomorphism namely coercive pressures (except for media) and mimetic pressures on the decision to use forensic accounting services. However, normative pressures (professional bodies and associations, forensic accounting services providers, stakeholders) were found not significant. Below are the discussions on the results of institutional isomorphism and the other factors that influence the decision to use forensic accounting services.

The role of central government towards anti-fraud function in local authorities began with the introduction of financial incentives such as Weekly Benefits Savings (WBS) focusing on benefit fraud (ceased in 2002) and Security Against Fraud and Error (SAFE) (ceased in 2006), followed by a number of different inspection bodies such as the BFI (ceased in 2008) and the Audit Commission (ceased in 2015) (Audit Commission, 2014; Lane, 2010). As the SAFE ended in 2006, there were no direct financial incentives for local authorities to focus on benefit fraud. Later, central government established the SFIS in which local authorities would focus solely on non-benefit fraud such as procurement and misappropriation of assets (Audit Commission, 2014). Those evidences suggested that central government used their coercive pressures (power) to dictate the use of certain institutional rules such as over directives, policies and legal requirement through their agencies to local authorities for counter fraud activities. Hence, although there are no direct rules or policies for local authorities to use forensic accounting services, local authorities might have to use the services if there is directive or intervention from central government to do so since *'none of the local authorities was under any obligation to defy central government directives in this way'* (Bovaird and Downe, 2006, p. 450). A clear example is a recent case involving Tower Hamlet Council in 2014 where the central government through the Secretary of State for Communities and Local Government called upon PwC to carry out forensic auditing towards the governance and allegation of fraud in the council (PricewaterhouseCoopers, 2014a; The Guardian, 2014).

Within English local authorities' context, Ashworth et al. (2007) suggested that coercive pressures through the form of legislation- the Local Government Act (1999) and the Best Value inspection program-were used by the central government on the introduction of a reform program (the Best Value framework). Bovaird & Downe (2006) found that coercive isomorphism existed within English local authorities in implementing the LGMA through

dependence on central government resources (financial, reputational or legitimating). In the present study, coercive pressures also found through reports on fraud by the Audit Commission. From 2001 to 2014, the Audit Commission published '*Protecting Public Purse*', among others reports, on the awareness of the importance to counter fraud, promoted good practices, improved data on fraud detection and the extent of fraud within local authorities in England (Audit Commission, 2014). Therefore, local authorities could use the reports as guidance in effectively countering fraud through in-house resources or external services such as forensic accounting services.

A study by Carpenter & Feroz (2001) found that coercive pressures through credit market influence in the early adoption of GAAP financial reporting practices by four US state governments, when conditions of fiscal stress and resource dependence exists. Local authorities require resources from the central government through grant to survive. For the period 2013/14, local authorities received 67% or £75.3 billion of government grant for their revenue expenditure (Office for National Statistics, 2015). Hence, other organisations that can provide resources can exercise power over lower level organisations (Carpenter & Feroz, 2001). The role of coercive pressures in institutional theory focus the impact of political rather than technical influences on organisational change (Ashworth et al., 2007). Power is a '*reserve of potential influence through the allocation of budgetary resources can be affected*' (Carpenter & Feroz, 2001, p. 572). The resource dependency perspectives proposed that pressures from external resource providers result in coercive isomorphism (Mizruchi & Fein, 1999), which can be a dominant factor in influencing a government's choice of accounting practices (Carpenter & Feroz, 2001). Thus, '*institutional may work in concert with other pressures such as resource dependency in shaping a government's decision to adopt a particular structure or management practice*' (Carpenter & Feroz, 2001, p. 572).

The next institutional isomorphism that is significant was mimetic pressures measured based on using forensic accounting services and the high rate of success received when using the services by other local authorities. Institutional theory assumes that after certain periods of time organisations will select among alternative structures or practices that are considered legitimate by other organisations in their field, regardless of structure or practices' actual efficiency (Carpenter & Feroz, 2001). In context of the current study, local authorities actively exercised counter fraud activities since 1990s through directive, policies and framework by central government despite the decisions on counter fraud ultimately resting with local councillors (Lane, 2011, p. 203). As implied by Button (2011) and Lane (2011), the counter fraud activities vary in term of capabilities, competency and structure in which some local authorities have a dedicated counter fraud team and others depend on their internal auditors.

In pursuing counter fraud, mimetic pressures could occur, i.e. through the formation of benchmarking clubs' councils and the creation of a scheme such as Beacon Council in recognizing the best performing councils and spread best practice (Ashworth et al., 2007). In the context of the current study, the dissemination of information by local authorities that used and were satisfied with the success of forensic accounting services may happen through either formal or informal meeting among local authorities' officers. For example, the formation of the 'Fighting Fraud Locally' as a strategy that collaborated counter fraud approach across local authorities in England. Part of the strategy was to have a right framework to encourage more effective information sharing both within local authorities, and between local authorities and central government departments and private sector (Home Office, 2012). The scope and complexity of fraud might cause elements of '*uncertainty that lead to mimetic decision making*' (Villadsen et al., 2010, p. 373).

However, institutional isomorphism of normative pressures was found not to be significant in the current study. Normative isomorphism often occurs within a particular profession operating in organisations that prompt changes of what they believe are accepted modes and rules of behaviour through teachings and membership of professional societies (DiMaggio & Powell, 1983). Carpenter & Feroz (2001) stated that institutional pressures for the US state government to adopt GAAP may stem from the professional education of accounting bureaucrats and from the growth of professional associations, such as the Government Finance Officers Association (GFOA) that span government organisations and promote specific financial management practices. Within English local authorities, Ashworth et al. (2007) measured normative pressures through trade unions, local government associations and professional groups, the Audit Commission, and the IDeA and concluded the influence of normative pressures in organisational change (implementation of the Best Value framework).

The current study measured normative pressures through professional bodies within local authorities' context in countering fraud - direct or indirect (the CIPFA, the ICAEW, and the ICFS), employees that hold professional membership, associations in local authorities (LGA, SOLACE, Alarm, and LAIOG), and the stakeholders (elected councillors, taxpayers, top management and business partners). As normative pressures were not associated with the intention to use forensic accounting services by English local authorities, it could indicate the strong influence of the professional bodies and associations towards maintaining using in-house counter fraud rather than external resources like forensic accounting services. According to Button et al. (2007), the membership of the ICFS had the potential to grow substantially and had a forum for the members to share practices and as a network across public and private sector organizations. The ICFS, directly involved in providing professional certification, focus

on counter fraud in the UK and there were a significant number of accredited counter fraud specialists within the English local authorities (Button et al., 2007).

The CIPFA was involved in developing counter framework in the public services including local authorities. The majority of the respondents of the current study were members of the CIPFA (as described in Table 5.4). While focusing to improve the internal resources, members of the profession need to acquire the desired skills through training and experience to gain new knowledge. There are possibilities that the internal resources within local authorities gained the appropriate skills and experiences from being a member of the ICFS and the CIPFA, equivalent to the skills of forensic accountants, to counter fraud. An alternative interpretation of the finding is the possibility of combination of the elements within normative and mimetic isomorphism. The professional bodies and association could encourage the members in the professions and associations to execute the practices adopted in their professions in their organisations. Hence, instead of using external services like forensic accounting services, local authorities focused upon their in-house counter fraud that would be mimicked by other local authorities. Mizruchi & Fein (1999) argued that it is somehow difficult to isolate different isomorphic forces in practice. For example, Ashworth et al. (2007) stated that the combined elements of normative and mimetic isomorphic existed: in the case of Beacon Council, disseminating their successful practices to facilitate improvement elsewhere through road shows, open days, site visits, secondments and consultancy.

Another possible explanation was the development of professional forensic accounting in the UK that could also affect the findings of the current study. Unlike in the US and Canada, there is no single regulated forensic accounting professional body in the UK at present. The ICAEW is responsible in governing the forensic accounting practices through the accreditation scheme

voluntarily under the special group rather than a formal certification in forensic accounting. Thus, there is possibility that the influence of using forensic accounting services is not too strong compared to if there is a regulated forensic accounting body with a significant number of members in local authorities. Other professional bodies like the CIPFA might want their members to focus based on their needs. According to Lane (2011), CIPFA and Alarm emphasized the significance of adequate investment in anti-fraud function, professionalizing staff and intelligence development and sharing (p. 199).

The insignificant results of normative pressures, somehow, similar to Yigitbasioglu (2015) that found normative pressures (promotion by the government and suppliers) were not influence top management team's decision to adopt cloud computing services in Australia. Similarly, Liang et al. (2007) concluded that normative pressures (the networking of top managers and the value chain comprising a group of closely related suppliers and customers) failed to confirm that normative pressures affect top management's participation in activities advancing ERP assimilation.

Other factors that influence the decision to use forensic accounting were perceived benefits of forensic accounting, costs to acquire forensic accounting services and the strength of internal control. Forensic accounting services have been applied in a variety of services areas, including: bankruptcy, insolvency and reorganization; computer forensic analysis; economic damages calculations; family law; fraud prevention, detection and response; financial statement misrepresentation; and valuations (Stanbury & Paley-Menzies, 2010). Under the services related to fraud, Singleton & Singleton (2010) stated that forensic accounting is the comprehensive view of fraud investigation that includes preventing frauds and analysing controls and gathering non-financial information. Crumbley et al. (2003) argued the difference

between forensic accounting and fraud auditing; in which a fraud auditor is an accountant with special skills in auditing, and a forensic accountant may take on fraud auditing engagements and be a fraud auditor but use other skills in accounting, consulting, legal in broader engagements.

Those studies mentioned above proved insightful on the role of forensic accountants that led to the benefits of forensic accounting particularly in fraud detection, prevention and investigation. The current study measured perceived benefits of using forensic accounting through: being able to deter fraud, enhance the image, and recovery of cash and assets. Skalak et al. (2005) provide a conceptual overview of fraud deterrence cycle comprising: establishment of corporate governance, implementation of transaction-level control process or the system of internal accounting controls, retrospective examination of governance and control, and investigation and remediation of suspected or alleged problems (p. 14). The authors mentioned that fraud deterrence cycle occurs over time and it is an interactive process which represents the first line of defence against fraud. For example, while an audit responds to the risks of fraud, forensic accounting investigation may respond to suspicions, allegations or evidence of fraud and can assist the auditor in formulating a plan to respond to external influences, such as tip-off and whistleblower allegations. The findings from the investigation will determine the action that should be taken in the form of both internal actions, such as suspension or dismissal, and external actions against the fraudsters (Skalak et al., 2005). Thus, organisations could protect their reputation or image by having a comprehensive fraud deterrence cycle amid the increase of expectation on governance within organisations from stakeholders. Fraudulent acts committed against organisations not only create loss on monetary but also the reputation and create a negative connotation to the stakeholders (Christensen et al., 2005). In the context of local authorities, the act of fraud *'is not a victimless crime and its*

impact is often felt much more widely than the purely financial, resulting in social and emotional harm to the members of society' (Fraud Advisory Panel, 2011, p. 5) and *'often has the sort of direct, negative impact on human life that is not found elsewhere'* (Gee et al., 2011, p. 1).

The next factor that influenced the decision to use forensic accounting services is cost to acquire the services. According to Grippo & Ibex (2003) and Gray (2002, as cited in Christensen et al., 2005, p. 74) forensic accounting services may be very costly depending on the scope and the extent of a forensic investigation. Apostolou & Crumbley (2008) stressed that a forensic audit may be significantly more expensive and time consuming than regular audit e.g. cover much more detail of fraud investigation work compared to financial or management audit. The cost of forensic accounting services could be higher if involved in litigation process (Grippo & Ibex, 2003; Ibrahim & Abdullah, 2007). For example, the cost of forensic audits on the allegations of governance failure and fraud cost Tower Hamlets councils nearly £1 million paid to PwC (The Guardian, 2014). Apostolou & Crumbley (2008) and Muthusamy (2011) reported that in the US, the overall fees incurred for the services in examining financial statement fraud of HealthSouth, the leading providers of healthcare service were \$276.8 million. The current study measured the cost to acquire forensic accounting services through a statement of: 1) forensic accounting services are very costly, 2) the cost of using forensic accounting services would influence my local authority's decision to use the services, and 3) my local authority cannot afford the cost of acquiring forensic accounting services.

The findings of the current study indicated that cost to acquire forensic accounting services is a major constraint towards acquiring the services. Within English local authorities, some

authorities were limited in their budget to counter fraud, particularly in district councils (Home Office, 2012). As described in Table 5-1, most local authorities that participated in the survey were English district councils which could contribute to the findings. Previous studies reported that resources or the size of organisations could impact the decision to use forensic accounting. For example, Ibrahim & Abdullah (2007) stressed that only big companies in Malaysia could afford the bills to acquire forensic accounting services. In the same view, Bierstaker et al. (2006) concluded that firms in the US with revenues of more than \$1 billion did use forensic accountants more than smaller firms. Additionally, the smaller entities were reluctant to invest due to concerns about costs in acquiring the services (Bierstaker et al., 2006).

Another explanation could be the investment made by some local authorities that created their own counter fraud team with a significant number of staff equipped with specialised skills such as within London Borough (Lane, 2011) which could be considered as cost effective for the authorities to operate in-house. Accordingly, consideration of a cost and benefit relationship was vital before engaging forensic accounting services (Grippio & Ibex, 2003). As argued by Bierstaker et al. (2006) and Christensen et al. (2005), organisations may be worried about the costs to invest in anti-fraud technology and forensic accountants, but may underestimate the potential benefits in terms of cost savings towards reducing losses related to fraud. As noted by Bierstaker et al. (2006), *'cost and benefit trade-off in mandating organisational use of forensic accountants may be an issue worthy of consideration by regulators'* (p. 531).

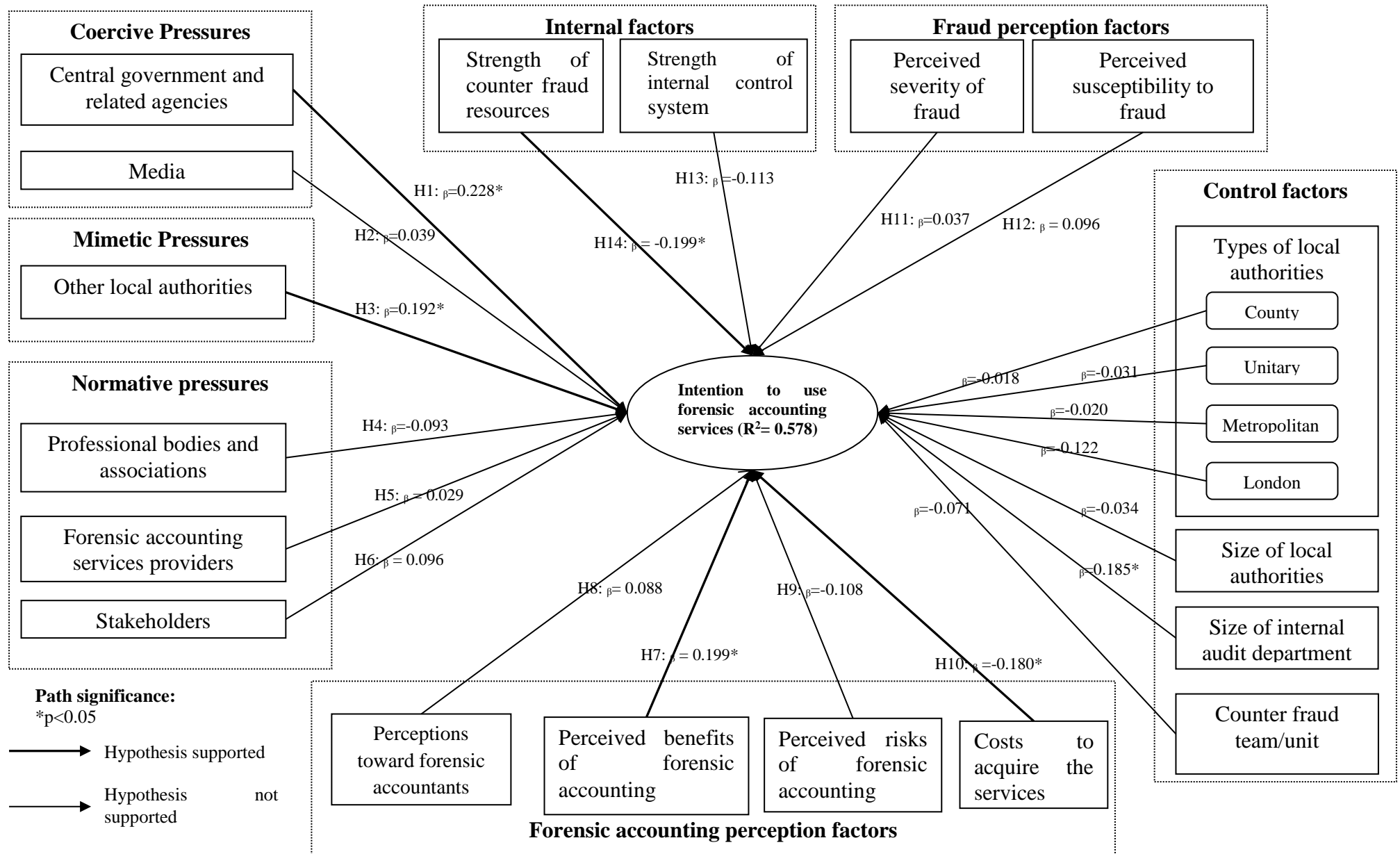
Finally, strength of the in-house counter fraud resources was determined to be a significant factor in the decision to use forensic accounting services. According to Button et al. (2007), local authorities were among the major entities beside the DWP and the NHS that employed fraud investigators known as the CFS. The emergence of the CFS within local authorities is

encouraging with about 3,000 counter fraud specialists possessing accredited qualifications such as Accredited Counter Fraud Trainer (ACFT), Accredited Counter Fraud Specialist (ACFS), and Accredited Counter Fraud Manager (ACFM) (Button et al., 2007).

6.2.4 Results of Hypotheses Testing

Figure 6-1 summarised the results of the PLS analysis, including standard path coefficients (β), path significant (t-value), and variance explain (R^2) as discussed in Section 5.7.2.2, Table 5-25 and Table 5-26. Overall, the model explains 57.8% of the variance of the intention to utilise forensic accounting services in fraud detection and prevention by English local authorities that participated in this study. As suggested by the findings, two of the institutional pressures, central government and related agencies (coercive), together with other local authorities (mimetic), were found to be statistically significant. Thus, the application of institutional variables as the main theoretical framework/model was supported. The next section discusses the outcome of each hypothesis testing, the implications, and contributions.

Figure 6-1: Results of Hypotheses Testing



6.2.5 Discussions on the Hypotheses

This section discussed the proposed hypotheses as described in Section 3.2. The first section discussed the hypotheses based on coercive pressures followed by mimetic pressures and normative pressures. Next, the hypotheses based on forensic accounting perceptions factors, fraud perceptions factors and internal control factors.

6.2.5.1 Hypotheses Based on Coercive Pressures

This section discusses the results of coercive pressures consisting of central government and related agencies and media.

6.2.5.1.1 Hypothesis H1: Directives, rules, and policies (including initiatives and action plan) from central government and reports on fraud by the related government agencies will positively influence the intention of English local authorities to use forensic accounting services.

The current study hypothesised that central government through directives, rules, and policies (including initiatives and action plan) and the related government agencies that issued reports on fraud will positively influence the intention to use forensic accounting services. The results supported this hypothesis, indicating the role of central government that might influence local authorities in decision-making process either through legal coercion or voluntarily diffusion (Oliver, 1991), which this study measured through the importance of the following statements: 1) directives, rules and policies from central government, 2) initiatives and action plan by central government to reduce fraud, and 3) reports on fraud by the government bodies such as the Audit Commission, the NFA and the DWP in influencing the decision to utilise forensic

accounting services. As outlined in the findings discussed in Table 5-7, such directives, rules and policies through best practice seem important as local authorities that used forensic accounting services tend to use the specialist sector rather than the Big Four with some authorities using shared services. As suggested by Lane (2011), the Audit Commission along with CIPFA produced best practices to counter fraud effectively that seemed important and beneficial for local authorities. 'Fighting Fraud Locally' published by the NFA recommended that local authorities should collaborate closely to counter fraud such as on regional partnerships, intelligence hubs and information sharing hubs (Home Office, 2012).

Accordingly, central government may view local authorities as a mechanism to achieve their policies rather than separate institutions that represent local citizens (Wollmann, 2000). As such, central government may provide assistance and action plan to local authorities in order to counter fraud effectively. Although there are no direct directives, rules and policies by central government for local authorities, there are guidelines and best practices have been produced by government bodies such the Audit Commission and the NFA. An example of directive imposed by central government was in a recent alleged mismanagement of public money in London Borough of Tower Hamlets in 2014. Central government intervened through the DCLG that appointed PwC to conduct the investigation process and the forensic audit. In this case, local authorities had no choice but to investigate using forensic accounting services providers.

The intervention by central government evidenced that local authorities have to abide by any action or policies of central government, particularly in high profile cases, and to ensure the best value of public spending (PricewaterhouseCoopers, 2014a). The appointment of PwC, in this context, can be considered as a signal from central government to local authorities on the

importance of protecting public fund and as enhancing deterrent of fraud. However, counter fraud work comes at cost. For instance, in efforts to reduce fraud, central government spent around £29 million to establish the NFA in 2008 (dissolved in 2014) and a fraud reporting centre (Lane, 2011). As a result of the introduction of the SFIS in 2014, central government provided £16 million fund to local authorities to refocus their counter fraud activities on non-benefit fraud (Audit Commission, 2014). The cost of investigation and forensic audit paid to PwC was borne by Tower Hamlets for almost £1 million (The Guardian, 2014).

Additionally, the principle of value for money is important as a tool related to principle of public accountability (House of Commons Committee of Public Accounts, 2007). As the costs to acquire forensic accounting services could be expensive, analysis of costs and benefits need to be considered. This could be the reason why no such directive is being implemented currently by central government. Lane (2011) stated that the DWP spent £9 million in 2006/07 for counter fraud work and the NAO concluded it not to be cost effective at a local level. Additionally, with the real cost of fraud being unknown, then cost and benefit analysis is hard to pin down. Central government, elected councillors and committees within the English local authorities' departments play a significant role in a decision to appoint external (planning) consultants (Mitchell, 1993). Furthermore, the author stated that the growth on the use of external consultants was due to central government's view that local authorities' officers lacked in terms of their independence and market knowledge and central government was willing to allocate funds to meet the purposes. Within the current study context, however, there were some action plans taken by central government with more focus on developing a good internal resource that could be embedded for a longer period rather than short term investigations by external providers.

For instance, central government, through regulated bodies such as the Audit Commission and the NFA, provides documentation of best practice for the public sector: '*Managing the Risk of Fraud: A Guide for Managers*' (HM Treasury, 1997) and '*Good Practice in Tackling External Fraud*' (National Audit Office and HM Treasury, 2008). The CIPFA (2008b) has also contributed to the development of best practice with its document '*Managing the Risk of Fraud Actions to Counter Fraud and Corruption*' and the National Fraud Authority (2011) provided guidelines '*Fighting Fraud Locally*' to become the best practice in local government counter fraud strategy. Within institutional theory, the best practice documents somehow come through coercive and normative pressures. Previous research e.g. Ashworth et al. (2007) classified central government as coercive pressures while the Audit Commission as normative pressures. For the current study, the best practices or guidelines, such as by the Audit Commission and the NFA, which act as central government bodies, were classified as coercive pressures. The documents published by the professional bodies within local authorities such as CIPFA were categorised as normative pressures. As noted by Carpenter and Feroz (2001), it may be difficult to distinguish the three forms of isomorphic pressures empirically, that may be acting on an organisation at any given point in time as it is possible that two or more forms will be acting at the same time.

This finding is on the lines of earlier institutional theory literature by Khadaroo (2005), Arena, Arnaboldi, & Azzone (2006) Bovaird & Downe (2006), Tsamenyi et al. (2006), Williams et al. (2009) that found coercive pressures through central government and related government agencies to positively influence on the intention to adopt and on the organisational changes both in the public and private sector. Within state government context, the result is consistent with findings by Carpenter & Feroz (2001) which revealed that federal government (potential to alter power relations of elected officials) affects the decision to adopt new accounting

practices in the US. Furthermore, the result supports the study by Ashworth et al. (2007), which suggested that central government (the form of legislation- the Local Government Act (1999) and the Best Value inspection program) was one of the strongest influences on organisational changes specifically on a set of highly structured organisations like English local authorities. Bovaird & Downe (2006) found that coercive isomorphism existed within English local authorities in implementing the LGMA through dependence on central government resources (financial, reputational or legitimating). Thus, the current study confirms central government and related government agencies as an important factor that influences the decision to use forensic accounting services. At the same time, the finding provides empirical implications of the theoretical model by examining central government and their agencies as coercive pressures in the field of forensic accounting.

The practical implications of the findings are twofold: local authorities do their best to remedy fraud issues in line with the direction or aim of central government to reduce fraud cases in both prevention of and detection of fraud by investing in use of forensic accounting services. At the same time, the reports on fraud measurements by the related agencies such as the National Fraud Authority and the Audit Commission provide valuable information on the nature and extent of fraud in local authorities. Central government could also emphasize the need to engage with external consultants by promoting use of forensic accounting services. In view of the high costs of forensic accounting services (e.g. the case of Tower Hamlets that costs nearly £1 million), central government could recommend local authorities to ensure the practice of transferring skills of forensic accountants into the in-house counter fraud resources is being carried out. As indicated in Table 5-8, fraud prevention, detection, investigations and digital forensic were among the most types of services utilised from forensic accounting services. The findings revealed an increase by those who used forensic accounting services in

services such as improving internal control systems and developing compliance strategies alongside fraud training services. Thus, there is opportunity to embed and transfer skills. This will benefit in the long term with low costs involved compared to hiring the forensic accounting services on a regular basis. This is particularly important at the time of austerity measures, and prevention and detection of fraud can be used as a tool to make savings. In addition, central government perhaps could provide assistance such as giving incentives to local authorities in enhancing their counter fraud resources by using forensic accounting services, particularly in the areas of digital forensic, fraud investigations, asset tracing and recovery, fraud detection, and fraud risk management. These particular services were among the top five of the types of forensic accounting services utilised by local authorities surveyed in this study.

Apart from that, central government could make the existence of counter fraud teams or units compulsory, similar to what has happened in the NHS, as the CFS had similar skills and knowledge with forensic accountants. Local authorities need to ensure it is important to estimate the cost of fraud within their own organisation e.g. for allocation of resources. The reports of fraud by the National Fraud Authority and the Audit Commission were estimated based on all local authorities which might not reflect the '*real*' extent and nature of fraud within each local authority or merely be the tip of the iceberg as there are possibilities that many frauds are undiscovered, hence hidden from official reports (Button et al. 2011). Moreover, both the National Fraud Authority and the Audit Commission had been abolished by central government during 2015, which either directly or indirectly had impacts on the estimation and nature of fraud. As shown in Table 5-13, most local authorities (66%) agreed it is difficult to estimate the total economic costs of fraud in their local authority. As such, local authorities could adopt a good technique used by forensic accounting services such as on fraud measurement (under

fraud risk management and digital forensic services) that could provide a more accurate picture on the extent of fraud.

6.2.5.1.2 Hypothesis H2: News of fraud highlighted by the media will positively influence the intention of English local authorities to use forensic accounting services

The current study proposed that media through the dissemination of news, publications and discussions on fraud will positively influence the intention of English local authorities to use forensic accounting services. Based on the data analysis, the results indicated that it is not significant. Van Peurseem & Balme (2010) analysed on the role of media (news articles) towards the practice of quality and threat of disestablishment of the New Zealand Serious Fraud Office based on the institutional perspective. The findings of the study show that media could be a powerful social and functional pressure for change. The role of media in publishing financial crime such as fraud has been regarded as '*infotainment*' (Levi, 2006). The argument that the headlines on the news were sometimes overwhelming might, to a certain extent, overshadow the need to remedy the real issues into a larger perspective. In this context, the media is considered exaggerating the risks of crime, cultivating an image of the world that is '*scary*' and '*mean*' (Reiner, 2007). For example, in the UK, the proportion of violent crimes relative to other crimes reported in television news broadcast is similar to the tabloid data rather than the quality or official data. As a result of this, it could have led confusions among the users of what being reported from different types of media.

There are also variations between media and market; printed media is more likely to provide more analysis than radio and television (Reiner, 2007). In another view, Chibnall (1997)

suggested that news on corruption and other police wrongdoings' stories have traditionally been set within the '*one bad apple*' context, whereas the news of normal individuals is interpreted as a testimony of the system (as cited in Reiner, 2007). As the story of '*one bad apple*' is being used many times, it has been changed as a story of institutional reform, 'this acknowledges the problems of previous practice but safeguards the legitimacy of the institution as one that is already putting things right' (Reiner, 2007). Within the local authorities, the situation can be very complex as other stakeholders such as central government and enforcement agencies did have interest pertaining to highlighted issues in the news. Apart from that, the insignificant result of the role of media could be due to local authorities' officers discounting media because they are experts and know reality. In addition, local authorities' officers have little regard for media. Thus, media, when reporting financial crimes, should be objective and continuously pressure to generate a greater awareness to tackle the real issues without any bias.

6.2.5.2 Hypothesis Based on Mimetic Pressures

This section outlines the discussion on the results of mimetic pressures of the extent and perceived success of using forensic accounting services by other local authorities.

6.2.5.2.1 Hypothesis H3: The extent and perceived success of using forensic accounting services by other local authorities will positively influence the intention of English local authorities to use forensic accounting services

This study anticipated that mimetic pressures through perceived used and success of forensic accounting services by other local authorities will positively influence the intention of English

local authorities to use the services. Based on the findings, forensic accounting services used and high rate of success in using forensic accounting services by other local authorities positively influence the intention of a local authority to use the services to detect and prevent fraud.

This finding suggested that information sharing among local authorities is important as it can be used as an input in deciding the correct supplier in the market. It is beneficial for government bodies to be an intelligent customer or user by sharing information and experience as a precautionary measure before appointing the external providers (House of Commons Committee of Public Accounts, 2007). For instance, the LGA could facilitate a medium for the interaction among local authorities through a special session or forum or online forum. The NFA Regional Partnership launched in 2010 encouraged local authorities and other agencies to work in partnership. This was either through exchanging information or fully operational partnership based on location (National Fraud Authority, 2011). Accordingly, Stock & Zinszer (1987) suggested that at earlier stages of selecting the potential external consultant, recommendations by others inside and outside the organisation are considered as one of the important factors.

The advantages of having input from the local authorities that already employed the forensic accounting services included; knowing the estimated costs will not be charged higher for the same work carried out and the performance of the providers also can be pre-evaluated. This is particularly important at the time when there is a reduction of allocation in the austerity era; any decision making could be more effective and efficient. Central government through the NAO recommended that government bodies implement *'better value for money from professional services'* (House of Commons Committee of Public Accounts, 2007).

Within the NIS of institutional theory, the main driver of changes is from external environment (e.g. government policy, regulation, supplier relationships) and not cost-minimising objectives (Moll et al., 2006). The findings of the current study are similar with findings from previous studies within the institutional theory that suggest mimetic pressures as a process of imitation among organisational field (Lawrence, 1999; Teo et al., 2003; Khadaroo, 2005; Tournon, 2005; Khalifa & Davison, 2006; Williams et al., 2009; Ugrin, 2009; Henderson et al., 2011). Furthermore, the results are similar to Ashworth et al. (2007) study which suggested that mimetic pressures through practices of other local councils in England give impact on organisational change. Thus, based on the hypothesis H3, mimetic pressures through perceived use and success of other local authorities that engaged in forensic accounting services initiate a local authority to use the services in detecting and preventing fraud.

The practical implication is that central government through initiatives, rules, and policies such as by publishing best practices and guidelines to counter fraud that could be applied by local authorities to use forensic accounting techniques or services, could provide better results. The experiences in utilising forensic accounting services and the success of detecting, preventing and investigating fraud cases could be shared among local authorities resulting in increasing their intention to use the services. In order to have better information sharing, other institutional bodies such as central government or the LGA could facilitate the initiatives. Another option is to create a single body that can act as intermediary that can be referred to by local authorities in searching the best solution to deter fraud. As local authorities share similar types of fraud, a pool of information and resources is useful so as to determine the appropriate actions to remedy fraud in-house or as a basis to appoint external providers.

6.2.5.3 Hypothesis Based on Normative Pressures

This section discuss the results of the hypotheses based on professional bodies and associations, forensic accounting services providers and stakeholders.

6.2.5.3.1 Hypothesis H4: Recommendations by the professional bodies and associations to effectively detect and prevent fraud will positively influence the intention of English local authorities to use forensic accounting services.

This study proposed that normative pressures through professional bodies and associations will positively influence English local authorities to acquire forensic accounting services. Contrary to expectations, there was no statistical evidence that H4 has an influence to utilise the services, thus H4 was rejected. The insignificant result may be explained by the discussions below.

The counter fraud work within local authorities is subject to action or plan by central government through other agencies and the professional bodies. There were three professional bodies used in this study; the CIPFA (majority of the respondents in this study were CIPFA members as depicted in Table 5-3), the ICAEW and the ICFS. Among these three professional bodies, the CIPFA was directly involved in developing counter framework in the public services including local authorities. A number of publications as a guidance for better governance has been produced such as '*Managing the risk of fraud, actions to counter fraud and corruption*' in 2008 which have become the standard of anti-fraud activity in the public services. Within this standard, the focus is to develop and improve a corporate anti-fraud capability within each public body by having adequate resources and strategies that could be implemented internally. While focusing to improve the internal resources, members of the

profession need to acquire the desired skills through training and experience to gain new knowledge. There are possibilities that the capabilities of the internal resources within local authorities after gaining the appropriate skills and experiences being a member of the CIPFA are equivalent to the skills of forensic accounting services providers. Therefore, such decisions to recommend turning to outsource can be very minimal.

Another possible explanation for this is that other professional bodies, such as ICFS, are directly involved in providing professional certification focus on counter fraud in the UK. According to Button et al. (2007), a significant number of accredited counter fraud specialists present within the English local authorities. Some local authorities, particularly in London Borough and Birmingham City Council, do have internal expertise and sufficient resources in detecting and preventing fraud. In practice, the ICAEW introduced the accreditation scheme for the forensic accountants to enable potential employers such as lawyers, the NAO and the SFO to choose a good forensic accountant. Overall, the findings also indicated that members of the profession (the CIPFA and the ICFS) were more inclined to use internal resources than the external providers.

The result is in contrast with findings from previous studies by Teo et al. (2003), Khadaroo (2005) and Henderson et al. (2011) which indicated the positive influence of normative pressures through professional bodies and society in organisational change. Both studies by Teo et al. (2003) and Henderson et al. (2011) were carried out within the private sector context that may have different perspectives to the current study. However, the result aligns with evidence provided by Yigitbasioglu (2015) that suggested normative pressures (the promotions by the government and suppliers) in Australia were not influence top management team's decision to adopt cloud computing services. Similarly, Liang et al. (2007) found that normative

pressures (the networking of top managers and the value chain comprising a group of closely related suppliers and customers) unable to confirm that normative pressures affect top management's participation in activities advancing ERP assimilation.

Thus, the results of hypothesis testing may be affected by the internal strategies and resources from the professional bodies and the overall indication is that normative pressures through professional bodies and associations do not significantly influence English local authorities in using forensic accounting services.

6.2.5.3.2 Hypothesis H5: The reports on frauds and the promotion of forensic accounting services in the market by the forensic accounting services providers together with their expertise and capabilities to perform forensic accounting will positively influence the intention of English local authorities to use forensic accounting services

Hypothesis *H5* examined the positive influence of normative pressures through forensic accounting providers (suppliers) on the intention of English local authorities to use forensic accounting services. The hypothesis results are not significant. Therefore, hypothesis *H5* was rejected. This result may be due to lack of promotion by the providers to disseminate information of their expertise needed by local authorities. Another possible explanation was due to scepticism about the promoted services by the recipients of the promotion. The report of fraud issued by the accounting firms tended to not specifically analyse the nature of fraud within local authorities' context. For example, the report by PwC and KPMG covered the statistics of fraud in both the private and the public sector. As indicated by the findings of the current study, local authorities were more inclined to have a specific service such as computer forensics. Based on a descriptive analysis in Section 5.3.2 this study found that forensic

accounting providers (the Big Four) do have competitors as some local authorities sought the services either from other local authorities that have expertise or their outsourcing providers (medium and small size).

The result is inconsistent with findings from studies by Teo et al. (2003) and Yoon & George (2013) who reported that perceived dominance of supplier is a significant predictor of innovation adoption. The contrast results, however, support the argument by Son & Benbasat (2007) that normative pressures through perceived dominance of supplier adopters was not a significant factor of initial adoption of B2B e-marketplaces.

6.2.5.3.3 Hypothesis H6: Pressures from stakeholders will positively influence the intention of English local authorities to use forensic accounting services

The final variable of normative pressures is investigated through H6 that posited stakeholders have a positive influence on the intention of English local authorities to utilise forensic accounting services. As suggested by Gomes (2006), the stakeholders included in this study were elected councillors, taxpayers, top management and business partners. The results of hypothesis testing show a positive relationship but not statistically significant, thus H6 was rejected.

The finding is contrasted with the results by Gomes (2004) who indicated that English local authorities are stakeholder-based organisations. The author suggested that stakeholders play an important role when local authorities devise their strategies. Furthermore, Henriques & Sadorsky (1996) confirmed the role of stakeholders in influencing a firm's strategies in environmental plan. The findings of the current study provide evidence that the role of

stakeholder might be different in terms of context and issues. For example, top management and elected councillors may not want to expose any wrongdoings publicly, rather solve the problem internally as the issues of fraud could get greater attention from the public, whereas the taxpayers may have to find a proper forum to disseminate their intention or request to local authorities in using forensic accounting services. Additionally, the taxpayers might not be aware of the role of forensic accounting in detection and prevention of fraud. The stakeholders are unlikely to be interested in the technical issue of forensic accounting services and deemed to lack knowledge.

The non-significant results may partly be explained by the existing structure of counter fraud in local authorities. The views of stakeholders are perhaps local authorities have adequate resources with a strong structure to counter fraud internally. Fraud prevention also may not be well publicised in the media to suggest that services such as forensic accounting services might be needed. Therefore, in-house counter fraud is sufficient enough, that may not require external services such as forensic accounting. Another possible explanation is the low level of the knowledge about the forensic accounting services among the stakeholders. These possibilities may lead to the rejection of H6 which empirically is not significant.

6.2.5.4 Hypothesis Based on Forensic Accounting Perceptions Factors

This section outlines the discussion on the findings of perceived benefits of forensic accounting, perceptions of the objectivity and credibility of forensic accountants, perceived risks of forensic accounting and costs to acquire the services.

6.2.5.4.1 Hypothesis H7: Perceived benefits of forensic accounting will positively influence the intention of English local authorities to use forensic accounting services

This study proposed that the perceived benefits of forensic accounting will positively influence the intention of English local authorities in acquiring forensic accounting services. The hypothesis testing provides empirical evidence that the perceived benefits were determinant factors in influencing English local authorities to hire forensic accounting services. As described in Table 5-5, nearly one fifth of the 139 local authorities that participated used forensic accounting services. Additionally, the results indicated that forensic accounting services are utilised regardless of the types of local authorities. In Table 5-9, the findings indicated that most local authorities that used (60%) were satisfied with the services received from the providers, either from the Big Four accounting firms or other providers. Therefore, it can be assumed that for those that utilised the services, they also realised the benefits of using the services which contributed to result (significant) on the benefits of forensic accounting. For local authorities that did not utilise the services, they perceived forensic accounting techniques and skills, such as using digital forensic, as important to deter fraud.

As noted by Singleton & Singleton (2010), forensic accounting services in the area of fraud refers to comprehensive view of fraud investigation that includes preventing frauds and analysing controls and gathering non-financial information. In addition, Crumbley et al. (2003) argued that the difference between forensic accounting and fraud auditing is: a fraud auditor is an accountant with special skills in auditing, and a forensic accountant may take on fraud auditing engagements and be a fraud auditor but use other skills in accounting, consulting, legal in broader engagements.

The results show that local authorities recognised the benefits of forensic accounting services in terms of greater knowledge, skills, experiences and quality of services to deter fraud, and asset recovery (measurement used in this study). Relatively, Selim & Yiannakas (2000) found that, both the public and private sector in the UK decided to outsource the internal audit services because of the benefits by means of greater access to the skills and high quality of services as organisations lack of in-house that possessed necessary skills. As suggested by Carey, Subramaniam & Ching (2006), the external services providers such as accounting firms had advantages over in-house resources such as internal audit department because accounting firms have the latest technology-based resources, industry specialisation and professionals who are specialists, experienced and well qualified. Within the management consultants' literature, Deakins & Dillon (2006) found that specific expertise of consultants and cost effectiveness were the main reasons for local authorities in New Zealand to acquire the services.

6.2.5.4.2 Hypothesis H8: Perceptions of the objectivity and credibility between forensic accountants and auditors will positively influence the intention of English local authorities to use forensic accounting services

The hypothesis H8 posited that the perceptions of the objectivity and credibility between forensic accountants and auditors would positively influence the intention of English local authorities to use forensic accounting services. The results indicate it is statistically not significant. This hypothesis was assessed through a statement that forensic accountants have more objectivity and credibility than internal auditors and have accounting expertise and knowledge in dealing with fraud. The internal auditors may perceive that dealing with fraud required a good understanding of internal issues such as environment of work and confidential

issues. Another possible explanation is the issue of inter-professional conflict that could affect the result. Internal auditors and CFS could perceive they had been thought not to do their job well if using forensic accounting services. The perceptions towards the objectivity and credibility of forensic accountants also could be difficult to be justified e.g. from own experience and recommendations from peers.

This finding, however, is contrasted with the findings of a study by Carey et al. (2006) who found that the perceptions of technical competence, including objectivity and credibility, posed by external providers' and in-house internal auditors influence the decision to outsource internal audit services. The findings of the current study might reflect that internal auditors did have certain knowledge and expertise in handling fraud.

6.2.5.4.3 Hypothesis H9: The costs of forensic accounting services will negatively influence the intention of English local authorities to use forensic accounting services

This study proposed a negative effect on the relationship between the costs to acquire the services and the intention to utilise forensic accounting services by English local authorities. The results found that H9 was empirically supported. Both the negative relationship and the significance value were confirmed. The current study measured the costs to acquire forensic accounting services through a statement of: 1) forensic accounting services are very costly, 2) the cost of using forensic accounting services would influence my local authority's decision to use the services, and 3) my local authority cannot afford the cost of acquiring forensic accounting services.

In the public sector context, Corcoran & Mclean (1998) expressed that principle of value for money was concerned with balancing conflicting elements (product or services with costs, and the risk) when purchasing the external services. Within the current study context, the high costs of forensic accounting services (i.e. the case of Tower Hamlets that cost nearly £1 million) means that local authorities are reluctant to use the services unless there are ideal justifications in terms of the '*worthiness*' that the work undertaken will be successful and give value added. The main objective of applying the principle of value for money is to ensure the taxpayer's money is well spent but, more importantly, it is an imperative directing them to keep their costs down, e.g. to operate efficiently, effectively and economically that reflects public accountability (Corcoran & Mclean, 1998).

There is concern from government and the public over the use and cost of management consultants in the public sector (ACCA, 2010). For example, the costs and benefits analysis is important in using external providers which usually required a substantial amount of fees. In the time of budget constraints, the best alternative solutions need to be carefully considered. Another concern raised is how external providers could transfer the appropriate skills to the public sector (ACCA, 2010). It will create a burden (additional costs) to the organisations if the same type of work is acquired from time to time rather than improving the internal structures within the organisations as a long term investment. As argued by Bierstaker et al. (2006) and Christensen et al. (2005), organisations may be worried about the costs to invest in anti-fraud technology and forensic accountants, but may underestimate the potential benefits in terms of cost savings towards reducing losses related to fraud in the future.

The result seems to be consistent with previous studies, which found that financial costs did influence the intention to adopt (Wymer & Regan, 2005), decision to outsource business

process (Gewald & Dibbern, 2009), and decision to outsource internal audit services (Speklé et al. 2007). Similarly, Balakrishnan et al. (2010) found that costs pressures negatively associated with the decision to outsource non-clinical services in the government hospitals. Their argument is based on the fact that compared to the private hospital, the governance structure in the government hospitals enforces institutional constraints on the management decision making process. The institutional constraints include the bureaucratic process and squeeze controls that were norm practices within the public sector context. Thus, the decision process may have been delayed or not been reviewed by the personnel that understand the nature of the problem.

An implication of this is the possibility that the presumption of '*expensive*' forensic accounting services only caters for '*wealthy*' organisations. If the cost becomes a major hurdle, then, it shows a '*missing link*' between what the forensic accounting is all about and how the practices have been operationalised. The argument is that management consultants of the Big Four accounting firms are among the highest revenues in the global market. Thus, the real purpose of providing services to assist organisations is no longer valid as it is more about maximising the profits or higher fees. Additionally, the notation '*ethic challenge*' as suggested by Cowton (2009) implies the need for the accounting profession to reflect ethical matters e.g. to help build a decent moral community (p. 187). Within this context, as organisations struggle to find the solutions to fight fraud, forensic accounting providers could do more (social contributions) rather than business focus types of services as the consequences of fraud not only affect the loss of money, but also the services that should be received by the public.

6.2.5.4.4 Hypothesis H10: Perceived risks of forensic accounting will negatively influence the intention of English local authorities to use forensic accounting services

Hypothesis H10 proposed that perceived risks of using forensic accounting services will negatively influence the intention of English local authorities to acquire forensic accounting services. As indicated by the empirical finding, the statistical evidence indicates the negative direction is supported but statistically not significant. Perceived risks in this study refer to the uncertainty faced by local authorities, where the consequences of the decision cannot be anticipated when acquiring forensic accounting services. The type of perceived risk operationalized in this study was performance risk, which is the risk that the service provided by the forensic accounting providers will not be delivered as expected by local authorities. For example, as credence based services, the pre-purchase information and knowledge on the services to be acquired naturally are difficult to realize (Mitra et al., 1999).

The findings indicated that English local authorities were concerned on the issues of confidentiality and the risk that forensic accounting services cannot guarantee the outcome. Mitchell (1994) stated that most providers of the professional services are allowed a significant amount of autonomy in the performance of their duties although they are bound by their code of ethics. Organisations spend a huge amount of money to protect classified information, yet professional services often get access and, in many aspects, may be total strangers or outsiders. This may expose risks that important information might be passed to unknown parties for various purposes and do harm to organisations.

The outcome on the use of professional services is based on the skill level of the professional, and that skill level cannot be applied constantly with equal result (Mitchell, 1994). A study by Deakins & Dillon (2006) suggested that some local authorities in New Zealand were experiencing significant gaps between their expectations and what is being delivered by management consultants. Within the context of the current study, there are possibilities that the forensic accountants might miss something or not be able to find anything during the investigations. While in the prevention of fraud, the question of who knows and what does not come to happened might aroused or none can predict the outcome with any degree of certainty. The result contrasts with the findings of previous studies by Gewald et al. (2006) and Featherman & Fuller (2003) who concluded that perceived risks are significant factor, which has negative influence of perceived risk on adoption intention. This may be explained by the fact that faced with problems with uncertain solutions (or dealing with the complexity to counter fraud), organisational decision makers tend to rely on mimetic pressures from the environments to economize on search costs (adapted from Cyert & March, 1963) to avoid the risks that are borne by first movers (Lieberman & Montgomery, 1998). As stated in Section 5.7.3.2, the mimetic pressures through other local governments are statistically influencing English local authorities to use forensic accounting services.

6.2.5.5 Hypothesis Based on Fraud Perceptions Factors

This section discusses the findings of the results of perceived severity of fraud and perceived susceptibility to fraud.

6.2.5.5.1 Hypothesis H11: Perceived severity of fraud will positively influence the intention of English local authorities to use forensic accounting services

Perceived severity of fraud refers to the serious potential consequences after the event of fraud faced by local authorities. The implications of fraud to local authorities are not limited to the financial losses but could also impact the quality of public services (Gee et al., 2010). Thus, hypothesis H11 proposed that the perceived severity of fraud will positively influence the intention of English local authorities to use forensic accounting services. However, the result of the PLS analysis does not support the hypothesis.

Local authorities might prefer to use internal resources at the beginning of the fraud investigation to avoid the negative impressions that there is a major case of fraud that involves external parties. Despite the published report on fraud e.g. Audit Commission (2012); National Fraud Authority (2012b); PricewaterhouseCoopers (2014) that highlighted the amount of loss and consequences to the society, it is very difficult to measure the actual effects of fraud. The question to what extent fraud could impact on the society, for instance, is difficult to measure. Compared to the private sector, for example, the effect of fraud includes the reduction of share prices, disclosure of business, and higher costs of fraud investigations in the event of massive fraud happening. In addition, the result of this study is similar to the study by Downs, Holbrook,

& Cranor (2007) that reported perceived severity of phishing risk (to avoid internet fraud) does not predict behaviour response.

The result of this study indicated the seriousness toward the implications of fraud not considered as the main driver to engage with professional services like forensic accounting services. Local authorities believed that the consequences can be dealt with through their internal control or internal resources.

6.2.5.5.2 Hypothesis H12: Perceived susceptibility of fraud will positively influence the intention of English local authorities to use forensic accounting services

Local authorities, like any other organisations, are not immune to risks of fraud. Numerous reports on fraud by e.g. National Fraud Authority (2012b) and Audit Commission (2014) indicated the extent and the potential of fraud. In this study, perceived susceptibility of fraud refers to local authorities' perceptions towards the likelihood that fraud could occur in their organisation. Thus, hypothesis H12 posited that the perceived susceptibility of fraud will positively intention of English local authorities to use forensic accounting services. The result from the data analysis contrasts with the proposed hypothesis H12. The empirical findings show that the perceived susceptibility of fraud is not statistically significant, thus H12 was rejected.

This result is likely to be related to how local authorities assess and estimate the nature and amount of fraud. The descriptive analysis of this study indicates that most local authorities face difficulties to estimate the total economic costs of fraud in their organisations. This implies that if local authorities are not able to determine the extent costs of fraud, the appropriate measures

to identify potential fraud will be low. Studies that highlighted the importance of fraud measurement stated that *'fraud is an ongoing problem that needs continuous monitoring and assessment'* (Brooks et al., 2009); it is difficult to apply the right solution if the nature and scale of the problem is not clear (Gee et al., 2010). Hence, fraud is still uncovered as there is no indication of the existence of fraud if no measurement of fraud has been done. For example, Gee et al. (2012) reported that only a quarter of local authorities implemented estimation on the total economic cost of fraud.

In addition, the role of government bodies, such as the NFA that established 'Fighting Fraud Locally', provides support and guidance to use the best practice approach to tackle fraud. The guidance among others stressed the need to emphasize a *'three-tiered'* approach: managing fraud risks, preventing and detecting more fraud, and pursuing and recovering losses. Hence, local authorities tend to rely on the best practices provided and implement within their local authorities, resulting in counter fraud more in-house rather than to outsource the services.

6.2.5.6 Hypothesis Based on Internal Factors

This section discusses the results on the findings of strength of internal control systems and strength of counter fraud resources.

6.2.5.6.1 Hypothesis H13: Strength of internal control will negatively influence the intention of English local authorities to use forensic accounting services

Internal control plays an important role as the front line defence to detect and prevent fraud (Ryan & Gerry, 2011). Hypothesis H13 proposed that strong internal control will have a

negative influence towards using the services by English local authorities. The results of data analysis do not support the proposition and H13 was rejected. Strength of internal control was measured by the statements of: 1) organisational structure supports effective internal control, and 2) management and employees are assigned appropriate levels of authority and responsibilities.

One possible explanation of the result is the local authorities' belief that it is more feasible to solve internally any internal control weakness, such as through internal auditors (Muthusamy, 2011) or counter fraud specialists rather than forensic accounting services. On the other hand, Button et al. (2007) argued that the structure, governance, and capabilities of the counter fraud (as part of internal control) within local authorities may vary, where some can be considered doing well and others either perform moderately or very minimally. The results of this study unsurprisingly evidence a recent study by Gee et al. (2012) that concluded most English local authorities performed best in terms of having a written counter fraud and corruption strategy in place. Additionally, the present result corroborates the results of Matsumura & Tucker (1992) who reported that if the internal control system in an organisation is good, more fraud can be detected internally (auditors). Additionally, Alleyne & Howard (2005) and Muthusamy (2011) agreed that organisations with strong internal controls are more capable in fraud detection and prevention. The overall indication is that local authorities with strong internal control will rely on their internal resources rather than the external professional services like forensic accounting.

The implications of these results suggested that local authorities can rely on their effective internal control system besides moving to proactive approach to deter fraud. However, as the fraud evolves, the internal control system needs to be regularly updated, such as reviewing the

fraud risk management system. Furthermore, the supports given by central government through their agencies by having best practice strategy or policy can be used by local authorities to strengthen the preventive measures.

6.2.5.6.2 Hypothesis H14: Strength of the in-house counter fraud resources will negatively influence the intention of English local authorities to use forensic accounting services

Prior studies that have noted the role of counter fraud specialists within local authorities include e.g. Button et al. (2007); Gee et al. (2010) and Lane (2011). Hypothesis H14 posited that strength of in-house counter fraud will negatively influence the intention of English local authorities to use forensic accounting services. The result of data analysis supports the proposition and H14 was accepted. The current study asked whether the number of staff and resources were adequate to counter fraud, received specialist professional training and accreditation, and the effectiveness of in-house is very high.

There are possible explanations for this result. First, the existence of counter fraud specialists in local authorities is not a legal requirement unlike the NHS (Button et al., 2007). Therefore, the structure, governance, and capabilities of the counter fraud within local authorities may vary. For instance, in some local authorities, the capabilities of the in-house counter fraud can be considered as doing very well, but some authorities may perform moderately or with very minimum impact. Similarly, Lane (2010) concluded that the in-house counter fraud in London Borough can be considered well equipped compared to the NHS and DWP but the scenario in other authorities could be different. With adequate number of counter fraud resources, the performance of London Borough to counter fraud is relatively similar to DWP at least.

Secondly, during the transition period of significant changes made by central government e.g. abolishment of the Audit Commission, the creation of the SFIS perhaps had effect in some local authorities. For example, in some local authorities with adequate counter fraud resources, fraud may be detected and prevented effectively. However, local authorities that faced a reduction of counter fraud staff as a result of the establishment of the SFIS may seek external services of forensic accounting. Thus, perhaps the uncertainty and the impact result of mixed arrangements to counter fraud might affect the result of this study.

6.3 Summary

This chapter explained and discussed the outcome of the hypotheses testing. Overall, five hypotheses were found to be significant factors in influencing local authorities to utilise forensic accounting services; coercive pressures, mimetic pressures, perceived benefits and costs of forensic accounting services, and the strength of the in-house counter fraud resources. Additionally, the results were compared with previous literature accordingly. Then, the possible explanations of non-significant hypotheses were highlighted. Finally, the plausible implications that perhaps could increase the use of forensic accounting services among English local authorities were provided. The next final chapter will recap the present study. The theoretical and practical contributions, limitations of the research, and direction of future research will be described.

CHAPTER 7: CONCLUSIONS

7.1 Introduction

The objectives of this study are threefold: (1) to examine the extent of use of forensic accounting services by English local authorities, (2) to examine the perceptions toward the core skills/essential traits of forensic accountants from the users' perspective, and (3) to investigate the factors that influence the intention to use forensic accounting services to detect and prevent fraud by English local authorities. In order to achieve the research objective (3) on the factors that influence the intention, institutional theory was used as a lens with which to view and organise the theoretical framework alongside other salient factors.

This chapter is organised into six sections. Firstly, a summary of the research aim and objectives is presented. Secondly, the main findings outlined the types of services used, in which indicated the demand in utilising forensic accounting services within the public sector context; i.e. digital forensic was one of the most services acquired due to the increase of complex and technical frauds; and the effects of institutional variables of coercive and mimetic pressures in shaping the use of forensic accounting services in local authorities. Thirdly, implications of the study are highlighted from the academic/theoretical and practical perspectives, including expanding the existing literature on the use of external providers to counter fraud within the public sector context. Next, limitations of the current study are presented followed by recommendation for future research. Lastly, some final concluding remarks are provided bringing the chapter to a close.

7.2 Main Findings

This study evidenced the existence and the usage of external professional services as a tool to protect public accountability within the public sector environment. In this context, the providers of forensic accounting play a role in providing their services to detect and prevent fraud in English local authorities. As fraud is considered a major problem, in some events although it can be detected, there are concerns of undetected fraud. Additionally, as increasingly complex and technological frauds are emerging one would expect the demand for forensic accounting services to increase, hence understanding more about forensic accounting services is important. The type of services acquired ranged from the most of digital forensic, including data mining, to the least of prosecution cases. Based on this, local authorities employed digital forensic as it is considered the area that resources in local authorities still lacked using it. Most local authorities surveyed in this study used non Big Four accounting firms as their external providers, with acceptable level of satisfaction of their services. However, it is difficult to judge the intention to use the services in the future because organisation may evaluate the costs and benefits to acquire the services besides the complexity of fraud cases.

Not all local authorities have counter fraud specialists and as a result of austerity measures, there is evidence that the number is falling. The reduction in investigative resources will mean that fraud is likely to be increased and local authorities will detect less fraud. Forensic accounting services are increasingly important when new fraud exists; counter fraud specialists can help but forensic accounting services are needed particularly in the prevention, detection and investigation, for example evidence of the findings from the current study indicated that digital forensic is the most used type of services. Although the growth of forensic accounting

services is considered as demand driven, mainly in the private sector and in the US, the situation in the UK public sector is considered different. The current study found that at least some types of services, i.e. digital forensic and fraud risk management, can be considered as demand driven. The diversified forensic accounting services offered by the providers, however, can be categorized as supply driven as local authorities tend to rely on external providers to solve the problems where there is lack of either capacity or expertise in-house particularly in complex and technological frauds. Overall, it is hard to figure out whether forensic accounting services in the UK are supply or demand driven but given the conditions in the public sector context, particularly in local authorities which are subject to fraud on what appears a massive scale, we can say that with the increase in fraud then conditions in the public sector for demand side is increasing. As evidenced in the current study, digital forensic including data mining and digital recovery were some of the services that have increasingly been utilised compared to other services.

Local authorities have expertise in forensic accounting services areas because of internal auditors and counter fraud specialists; however, not all local authorities have counter fraud specialists and fraud needs much more expertise, for example in the areas of computer forensic and poor 'fraud' record in fraud management. In relation to the views of the functionalist and critical image as suggested by Werr & Styhre (2002), the consultant-client relationship inclined to functionalist image client as a buyer rather than as a victim, as indicated in Table 6.1. For example, the reason for using forensic accounting services was due to lack of capabilities or skills such as in computer forensic examination and fraud risks management. Furthermore, in the aspect of nature of the client, the current study found that the utilisation of forensic accounting services by local authorities is based on the recommendation by local authorities

or mimicking process rather than using the services because of persuasive strategies by the providers.

Within the institutional factors, mimetic pressures were one of the significant factors in the current study. In this context, a local authority tends to model other local authorities that they perceived successful when using forensic accounting services. The number of local authorities with and without counter fraud units surveyed in this study indicated a similar pattern regarding the number that used forensic accounting services, which reflects the complexity of fraud cases that occurred. It is still not certain why central government does not make it compulsory through statute for local authorities to have their own counter fraud unit as compared to the NHS (Lane, 2010). It is important to have a statutory requirement in the basis to have some standardisation in terms of counter fraud structures and techniques to counter fraud but it has not yet been implemented in local authorities. Hence, it may rationalise the demand for forensic accounting services within local authorities as indicated in the findings of the current study.

The emergence of NPM during the 1980s shaped the demand for business management expertise in public sector circles (Saint-Martin, 1998). Due to the dominance of the NPM in the public sector reforms, NPM provides an important context of the growing demand and the role of management consultants within the public sector, including in the UK. As indicated in the literature, public sector accounting accounted for more than 30% of global consulting and that management consultant packaged and sold the NPM reforms. Although some used management consultants, it does not indicate a strong supply side but clearly those that buy are using these in technically advanced instances of fraud. Forensic accounting supplies are not '*villain*' here in the NPM reforms but could be part of a solution building trust in public finances. As part of the component of the NPM principles, management consultants known as

forensic accounting services in the context of the current study, could play a greater role to protect public fund through detecting and preventing fraud within local authorities.

The findings of the current study evidenced that there is an increase in the types of services engaged by local authorities, for example, in digital forensic and fraud risk management. Hence, it is clear that utilising forensic accounting services is at the vanguard of developments to stop these complex and technological frauds. As indicated by Corcoran & Mclean (1998), within the public sector, sometimes it may be difficult for the potential buyers to evaluate the services being offered by the management consultant. Forensic accounting services are considered multi-diversified services. Thus, it is an opportunity for the providers to be clear what they offer and advertise their success in forensic accounting services provided to the public sector. As a result, it will be useful to the providers, the local authorities in fraud management and for the public good. Local authorities surveyed are found to choose forensic accounting services within the sector and shared services more than the Big Four accounting firms, which might be an independence issue if the Big Four accounting firms are already used for statutory audit. However, another issue could arise whether the capability of the providers within the sector is enough going forward with all the advances in fraud techniques and technology.

The rise of utilising management consultants, given the variation of services offered in which the public sector is considered as a major customer, however, has not materialised in the current study as expected. Hence, taking into consideration the complexity of fraud and the development of forensic accounting services in the UK context, the situations in local authorities were different. Overall, only a fifth of local authorities surveyed are using forensic accounting services and satisfied with the services received of fraud detection, prevention, and investigation. Although local authorities are not used much but the types of services i.e. fraud

investigation are the most sought, for example, digital forensic including data mining, asset tracing and recovery. Under fraud prevention types of services, most local authorities used the services for fraud risk management, fraud training, and reviewing counter fraud procedures.

The use of forensic accounting services from fraud risk management to digital forensic indicated the importance of the services now to the public sector and are expected to expand in future. It is not just investigations services that have been used, thus forensic accounting services can support work of internal auditors and detection work of counter fraud specialists especially at the cutting edge of fraud techniques. Therefore, it is an opportunity for forensic accounting services to get into the public sector market as in-house services are being cut due to the austerity measures and the establishment of the SFIS. The remaining local authorities that did not use the forensic accounting services could be due to some reasons; including the belief that any investigation of fraud is better carried out in-house, the issue of effectiveness for some local authorities that are small district councils with traditional low levels of fraud and will only use the services on a '*needs basis*' i.e. on the complexity of fraud or the need for obsolete independence.

In relation to the concept of deinstitutionalisation, it is not clear whether the process of deinstitutionalisation; the abolishment of central government agencies such as the Audit Commission that are part of fraud management strategies to institutionalisation i.e. using forensic accounting services from the private sectors occur in the context of this study. Although the operation of the Audit Commission has ceased, the counter fraud work is continued under the CIPFA. Additionally, not all local authorities surveyed in this study use forensic accounting services as there are local authorities that still rely on their in-house resources.

To identify the determinant factors, within the institutional context, the findings indicated that the coercive pressures through central government and related agencies and mimetic pressures through practices of other local authorities significantly influenced the decision to use the forensic accounting services. Additionally, perceived benefits of forensic accounting services, cost to acquire the services, and strength of the in-house counter fraud were deemed to be associated with the intention to use forensic accounting services. Overall, mimetic pressure was the most significant among those factors.

7.2.1 Coercive, mimetic and normative pressures

DiMaggio & Powell (1983) posited three forms of institutional isomorphism - coercive, mimetic and normative. Coercive pressures derived from legal pressures, political pressures or *'the kind of intense pressure powerful organisations are able to exert on less-powerful, dependent organisation'* (Jacobson, 2009, p. 6). Mimetic isomorphism refers to the tendency to mimic other organisations in a similar field, in which organisations tend to model themselves after similar organisations in their field that they perceive to be more legitimate or more successful. Normative isomorphism is related with the professionalism associated with formal education and professional networks. Within institutional theory, this study identifies two organizational factors that can significantly influence the use of forensic accounting services to detect and prevent fraud by English local authorities: (1) directives, rules, and policies (including initiatives and action plan) from central government and related government agencies; and (2) extent and perceived success of using forensic accounting services by other local authorities. These institutional pressures were created by central government either directly or through their agencies, and other local authorities. Thus, local authorities were

subjected to at least two forms of isomorphic pressures: coercive and mimetic. Over the years, the arrangement and development of counter fraud in English local authorities was largely dependent on central government. Without a statutory lever, central government either directly or through their agencies encouraged local authorities to invest in counter fraud functions.

Government pressures for effective fraud investigation can be seen through a number of different inspections such as the BFI, and the Audit Commission, and funding regimes (Lane, 2010). Given the nature and the complexity of fraud besides the capability to counter fraud, local authorities imitate other local authorities by using external providers within the sector. However, no compelling evidence was identified that normative pressures were active forces for local authorities in this study. Empirically, the three forms of isomorphic pressures that may be acting on an organisation at any given point in time may be difficult to distinguish as it is possible that two or more forms will be acting at the same time (Carpenter & Feroz, 2001). Within the context of this study, both coercive and mimetic pressures might be most effective in influencing organisations to engage forensic accounting services (Muthusamy, 2011) based on the complexity of fraud cases. For example, coercive pressures from government arose in the case of the Tower Hamlet Council that involved government intervention by appointing PwC to investigate mismanagement, while mimetic pressures occur as a local authority inclines to model other local authorities that they perceive successful when using forensic accounting services based on the similarity of fraud cases. Overall, institutional theory provides a useful theoretical lens through which to view organisational choice in the public sector, as in the context of the current study, the choice to use external services by local authorities through coercive and mimetic pressures.

7.3 Contributions of the Study

This study has provided an assessment of the extent, perceptions, and factors related to the use of a strand of the management consultants (professional services firms) of forensic accounting services in fraud detection and prevention using a survey of local authorities in England.

7.3.1 Academic and Theoretical Contributions

A chief finding is empirical evidence on the extent of use of forensic accounting services among English local authorities surveyed. It is particularly important to understand the resilience against fraud in local authorities at the time of budget cuts and changes in the inspection body of the Audit Commission that was dissolved in 2015. Previous studies on counter fraud within local authorities mainly discussed the use of internal resources to counter fraud (e.g. Button et al., 2007; Lane, 2011; Button, 2011; and Gee et al., 2012). The literature review indicated very limited empirical study in forensic accounting and the use of it as a tool to prevent, detect and investigate fraud in the UK context. Additionally, Lapsley & Oldfield (2001) and Deakins & Dillon (2006) stressed that little is known on the practices of management consultants in the public sector. Thus, this study contributes to the body of knowledge within the forensic accounting; fraud and management consultants within the public sector context by complementing those earlier studies, in focusing on the utilisation of external resources such as forensic accounting services to counter fraud particularly in the UK public sector.

Another main contribution is that this study provides a theoretical framework as a lens to determine the factors that influence the organisational intention in using management

consultants such as forensic accounting services as depicted in Figure 6-1. The integration of institutional theory as the fundamental framework and other variables based on forensic accounting, fraud, and internal control literature resulted in a comprehensive model at organisational level. The applicability of institutional theory is substantial as institutional pressures are considered strong in a set of highly structured organisations such as English local authorities (Ashworth et al., 2007). The findings of this study add to the growing evidence that coercive pressures and mimetic pressures directly influence organisational action by confirming its applicability to the intention in using forensic accounting services. In other words, changes of accounting practices (relying on the external providers) are more likely to occur when there are pressures from central government and organisations in a similar field (other local authorities). Mimetic pressures through other local authorities are the most significant among the institutional variables. However, the current study did use institutional theory to test it but mainly used it as a frame. Therefore, the model that had been developed in the current study can be used to examine other sectors and industries.

As argued by Parkhe (2003), institutional changes necessarily lead to deinstitutionalisation, which refers to the process by which institutions weaken and disappear (Oliver, 1992). In the context of the current study, an institutionalised organisational practice could refer to the current arrangement of counter fraud in local authorities such as using internal resources (internal audit and counter fraud team) while the new practice refers to utilising external providers of forensic accounting services. The findings of the current study, however, do not confirm that deinstitutionalisation process occurs as not all local authorities utilise forensic accounting services to counter fraud.

Finally, other important variables incorporated in the theoretical model; perceived benefits of forensic accounting, costs of forensic accounting services, and strength of counter fraud resources indicated a strong empirical support as predictors of organisational intention to use forensic accounting services. Accordingly, by combining institutional based variables and other important factors, this study corroborates the arguments and evidence that organisations may simultaneously use both social and technical indicators as guides to actions even in a single domain such as intention to use forensic accounting services (adapted from DiMaggio & Powell, 1991 and Teo et al., 2003). In this study, coercive pressures arising from central government and related agencies, and mimetic pressures through other local authorities, are considered as social indicators that significantly influence the intention to use forensic accounting services.

7.3.2 Practical Contributions

This study has demonstrated the influence of at least two forms of isomorphic pressures; (i) coercive: central government and related agencies, and; (ii) mimetic: perceived used by other local authorities on the intention to use forensic accounting services. Practically, central government could play a greater role, such as providing incentives aligned with the high costs of forensic accounting services. As indicated previously, the cost of forensic accounting is one of the significant factors that influences local authorities to use forensic accounting services. Alternatively, certain types of forensic accounting services needed by local authorities might need to be given greater attention or support from central government. The types of forensic accounting services include digital forensic, fraud risk management and fraud training. Both fraud risk management and fraud training can be considered as an initial investment to provide

necessary forensic skills for in-house counter fraud, which is beneficial in the long-term. At the end, both central government and local authorities are accountable to protect public funds.

Corresponding to mimetic pressures, the result of the current study suggests that local authorities have a greater tendency to follow a similar practice of utilising forensic accounting services to detect and prevent fraud that they perceive to be more legitimate or successful. The finding enhances the understanding of mimetic isomorphism as local authorities incline to adopt similar practices from other local authorities. In order to have better information sharing, other institutional bodies such as central government or the LGA could facilitate the initiatives. Considering the nature of fraud which can be very complex, and the effectiveness of forensic accounting services which is unknown, mimetic isomorphism arises as a response to organisational uncertainty in identifying the best course of action (adapted from Carpenter & Feroz, 2001).

Additionally, the result of this study provides insights that local authorities could initiate or improve their relationships with other local authorities in order to find the best or effective solutions to counter fraud. This can be achieved by having shared services or partnership from other local authorities that have capabilities and strengths in their counter fraud resources. Thus, sharing information and intelligence among local authorities is vital in order to have an effective counter fraud.

Based on the forensic accounting perceptions factors, perceived benefits and costs of forensic accounting services are the determinant factors to use forensic accounting services. Realising the benefits in using forensic accounting services, the intention to acquire forensic accounting services was constrained by the financial costs. Therefore, a practice of transferring skills and

knowledge from the forensic accounting providers into in-house counter fraud could provide long-term costs benefits. Additionally, forensic accounting services' providers could have better marketing strategies in order to supply specific services needed by local authorities. For instance, the most types of services engaged by local authorities in this study were digital forensic and risk management. The professional bodies such as the CIPFA, the ICAEW and the ICFS could provide incentives by giving recognition to local authorities that were considered to have performed well in combating fraud. Such recognition and award could motivate other local authorities to follow the best practices. In other words, the perception of forensic accounting services as '*luxury services*' needs to be changed.

7.4 Limitations of Research

This study is subject to a number of limitations. First, this study examined only one public sector, which is local authority. Therefore, this study cannot seek to generalise based on one sector/industry, but the model that has been developed could be used for other sectors/industries. Secondly, this study is subject to limitations by using a questionnaire of close-ended questions in nature. Thus, further research can be conducted by combining qualitative methods (for instance, short or full interviews) and quantitative methods (for example, survey). In this sense, more than one method can be used to improve the validation process of research data for examining the phenomena and enhance the future findings on the utilisation of forensic accounting services.

A further limitation of the current study is related to the use of the group of respondents that may also limit the generalization of the results. Despite the group of respondents (Chief Executive, Director of Finance and internal auditors) having either direct or indirect influence

in the decision-making process, the opinions of councillors, audit committee members, and minister or secretary in the DCLG are also influential. Thus, future study could incorporate other important groups of respondents such as the councillors and audit committee members of local authorities besides representation from the related ministry.

The final limitation of this study is the issue of social desirability bias, which relies on truthful responses from respondents in survey-based research. However, social desirable responding is the tendency for participants to present a favourable image of themselves (Mortel, 2008). However, several efforts (e.g., ensuring anonymity and confidentiality) were used to limit concerning this issue.

7.5 Future Direction of Research

The limitations of the study imply the requirement for further research. The first recommendation would be a replication of the current study's theoretical framework in different settings, which might include other public bodies such as the NHS and the ministry departments. Moreover, a further study in other countries' public sector bodies could provide interesting insights into national comparisons and international practices considering institutional, economic, political environment, and cultural differences. It is worth noting that this is a snapshot study carried out at the time of some changes made by central government that affect the counter fraud arrangements in local authorities, such as the abolishment of the Audit Commission, austerity measures, and the establishment of the SFIS. Thus, some of the influences of factors such as government pressures, normative pressures and financial costs may vary during this transition period. A longitudinal study on the factors that influence the organisational intention to use forensic accounting services could affect the variables.

This study involved a group of senior management in local authorities for data collection. Although the justification to use key personnel that act as proxy to local authorities is strong, future study could conduct interviews and survey other significant participants (Muthusamy, 2011). The purpose of interviews, for instance, is to explore possible explanations and interpretations to have richness of data. Data collection may engage councillors, and members of the audit committee may also play an important role in the decision-making process. As one of the findings of the current study shows the presence of strong coercive pressures related to central government, representatives from the DCLG could be included in the data collection. Furthermore, future studies could incorporate providers of forensic accounting services and not just potential users to gather information from various perspectives.

A further recommendation for future research is to incorporate additional factors that could increase the explanatory power of the dependent variables. As the use of institutional theory in this study focused on the social actors, using other theory, such as Transaction Costs Economic (TCE) theory, might be useful to investigate from the economic perspectives. The inclusion of the additional variables may possibly improve the ability of the model to more accurately predict intention. It is also recommended that further research be undertaken to measure the performance of forensic accounting providers in detecting and preventing fraud within the public sector context.

Future research could also examine how the implementation of the new framework of local audit affects financial management practices including counter fraud activities in local authorities. This is particularly important as future research could have implications for policy and practice in relation to the major changes in policies and framework within local authorities' landscape. As outlined by RAND Europe and Ministry of Housing, Communities and Local

Government (2018), major changes to local audit includes the termination of inspection and assessment exercises by the Audit Commission, the outsourcing of audits which were previously carried out by the Audit Commission, the introduction of the Local Audit and Accountability Act 2014 and the establishment of the new local audit regime. Among the issues are whether reports provided under the ‘old regime’ of the Audit Commission which are no longer available, such as conducting value for money assessment, will be replaced and whether, in a ‘free market’ for external auditors, some large accounting firms come to dominate (DCLG, 2013c; RAND Europe and Ministry of Housing, Communities and Local Government, 2018). Moreover, there could be potential conflicts of interest between audit and non-audit services provided by the accounting firms. Some of the accounting firms also need to build their expertise in public sector that could take time and effort. As the operations of the Audit Commission completely ceased in 2015, it is interesting for future research to investigate and compare the sustainability of local authorities to protect public funds.

As a result of the local audit regime mentioned above, some new bodies have been embedded within local authorities’ framework such as the CIPFA Counter Fraud Centre which is in charge of Fighting Fraud and Corruption Locally, which began in 2016, the Financial Reporting Council (FRC) which is responsible for inspections and regulation of the quality of audits, and the National Audit Office (NAO) which is responsible for developing codes of audit practice and guidance for the regulation of external auditors (CIPFA Counter Fraud Centre, 2016, RAND Europe and Ministry of Housing, Communities and Local Government, 2018). Future research could incorporate the emergence of new players within local authorities’ context in using new variables based on institutional isomorphism of normative and coercive pressures adopted in the present research.

Practically, it is also useful for future research to examine the diverse roles of forensic accounting services. As pointed out in Figure 2-1 on the role of forensic accounting services, investigation services (the focus of the present research) and litigation services were the main services provided. Further extensive examination of the litigation services could provide a comprehensive picture of the role of forensic accounting services (Muthusamy, 2011) within local authorities. Initially, the present research discovered that the use of litigation services and expert witness has decreased by local authorities, as outlined in Table 5-8. Therefore, further study could investigate what is driving the decline in litigation services, e.g. whether it is due to financial constraints as a result of austerity measures, less detected fraud cases or other factors.

In order to enhance the level of intention to use forensic accounting services, future research could expand the current theoretical framework by adding mediator or moderator variables that could provide more theoretical contribution. Future research could benefit practice by extend exploration of underlying mechanisms in terms of mediating and moderating effects in order to be able to make recommendations on the use forensic accounting services, e.g. by addressing the level of perceived complexity of fraud cases, types of external auditors and different counter fraud structures in local authorities. Additionally, incorporating smaller local authorities in the study sample could provide a significant practical recommendation for the government to detect and prevent fraud in differences types of local authorities. Furthermore, future research could be conducted based on case studies in term of local authorities that are considered doing well and not doing well in countering fraud. Among other things, an examination of the previous practices such as having Comprehensive Performance Assessment (CPA) back in 2002 (replaced by Comprehensive Area Assessment (CAA) in 2009) with the objective to measure the overall performance of local authorities regularly could still be relevant to be used

in future. Finally, future studies could make comparison with other countries such as Scotland, where the Accounts Commission is still in operation, and Wales, where the Auditor General of Wales is responsible for auditing most public sector bodies. This could add insight into the recent audit reform in England (RAND Europe and Ministry of Housing, Communities and Local Government, 2018).

All in all, the current research and future research should provide ample evidence to help government and local authorities to manage fraud and corruption, especially through the judicious use of forensic accounting services – if there is an appetite for such evidence.

7.6 Conclusion

This study empirically investigated the extent in using forensic accounting services and the determinants of organisational intention to use the services within English local authorities. This study found that forensic accounting services play a role in local authorities to counter fraud. A cross-sectional study and quantitative data analysis identified the important predictors of organisational intention to detect and prevent fraud by English local authorities. Coercive pressures through central government and related agencies, mimetic pressures through other local authorities, perceived benefits, financial costs, and counter fraud resources were identified as significant direct antecedents of organisational intention. This study also offered a theoretical contribution in pioneering in using the institutional variables in the context of forensic accounting services to detect and prevent fraud within the public sector context.

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APPENDICES

Appendix 1: Types of Forensic Accounting Services in the UK

<p style="text-align: center;">KPMG</p> <ol style="list-style-type: none"> 1. Anti-Bribery and Corruption Compliance and Investigations <ul style="list-style-type: none"> ▪ Ensuring effective firm-wide policies, systems and controls comply with regulation 2. Anti-Money Laundering (AML) and Sanctions Compliance <ul style="list-style-type: none"> ▪ Ensuring AML and sanctions compliance framework 3. Corporate Intelligence 4. Dispute Advisory Services 5. Economics and Regulation Advice 6. Forensic Assistancess in Transactions 7. Fraud and Financial Misconduct <ul style="list-style-type: none"> ▪ Using technology expertise ▪ Tracing, freezing, recovering funds/assets ▪ Taking remedial action 8. Intellectual Property and Contract Governance 9. Major Projects Advisory <ul style="list-style-type: none"> ▪ Risk analysis and Management ▪ Project and Programme Management 10. Software Asset Management <ul style="list-style-type: none"> ▪ Quantification of Licence Position ▪ Licence Optimisation ▪ Procurement Advice 	<p style="text-align: center;">EY</p> <ol style="list-style-type: none"> 1. Fraud and Investigations 2. Dispute Services <ul style="list-style-type: none"> ▪ Expert witness services ▪ Commercial and contractual disputes ▪ Expert determination ▪ Professional negligence 3. Forensic Transaction Services 4. Business Integrity and Corporate Compliance <ul style="list-style-type: none"> ▪ Identifying risk exposures ▪ Implementing compliance programmes 5. Forensic Technology and Discovery Services <ul style="list-style-type: none"> ▪ eDiscovery and information governance ▪ Cybercrime ▪ Software license forensics ▪ Data analytic 	<p style="text-align: center;">PwC</p> <ol style="list-style-type: none"> 1. Disputes 2. Investigations <ul style="list-style-type: none"> ▪ Anti-money laundering ▪ Asset tracing ▪ Bribery & corruption
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<ul style="list-style-type: none"> ▪ Computer forensics ▪ Data analytics ▪ Forensic technology solutions ▪ Fraud and fraud risk <p>3. Forensic Advisory</p> <ul style="list-style-type: none"> ▪ Contract and project risk ▪ Integrity due diligence ▪ Fraud prevention and detection ▪ Litigation readiness reviews ▪ Software asset management ▪ Value for money reviews 	<p style="text-align: center;">Deloitte</p> <ol style="list-style-type: none"> 1. Bribery and Corruption Risk <ul style="list-style-type: none"> ▪ Bribery Act UK 2011 2. Financial Crime 3. Fraud Risk Management <ul style="list-style-type: none"> ▪ Vulnerability diagnostic ▪ Vulnerability workshops ▪ Staff training ▪ Policies in ethics and whistle blowing 4. Anti-Money Laundering 5. Fraud and Accounting Investigations <ul style="list-style-type: none"> ▪ Bribery and corruption ▪ Accounting issues and irregularities ▪ Fraud & theft ▪ Intellectual property infringements 6. Intellectual Property Investigations 7. Asset Tracing & Recovery 8. Expert Witness Services 9. Expert Determination 10. Arbitration 11. Business Intelligence Services 12. Deloitte Discovery <ul style="list-style-type: none"> ▪ Computer forensics specialists-collecting data in a wide range of formats and media, navigating IT systems, preserving data ▪ Data analytics- assisting in locating, scoping, acquiring, testing, verifying data, data mining 13. General Counsel Programme <ul style="list-style-type: none"> ▪ Seminars and round table events
<p style="text-align: center;">Grant Thornton</p> <ol style="list-style-type: none"> 1. Digital Forensics <ul style="list-style-type: none"> ▪ Computer forensic ▪ Data analytics ▪ Data visualisation ▪ E-discovery and disclosure 2. Expert Witness <ul style="list-style-type: none"> ▪ Commercial and contractual disputes ▪ Professional negligence 3. Fraud Solutions 	

<ul style="list-style-type: none"> ▪ Fraud Training ▪ Fraud Risk Management ▪ Fraud Investigations ▪ White Collar Crime ▪ Asset tracing ▪ Criminal defence <ol style="list-style-type: none"> 4. Fraud Insolvency Division <ul style="list-style-type: none"> ▪ Traces and recovers funds from assets misappropriation 5. Insurance Claims 6. Internet Intelligence <ul style="list-style-type: none"> ▪ Using advanced internet search technologies 7. Valuations
<p style="text-align: center;">PKF</p> <ol style="list-style-type: none"> 1. Appraisal of financial losses resulting from fraud 2. Appraisal of damage resulting from prejudicial acts 3. Preparation of expert opinions 4. Assisting solicitors in the financial aspects of cases 5. Intervention as arbitrators or mediators in dispute resolution
<p style="text-align: center;">Kroll</p> <ol style="list-style-type: none"> 1. Fraud & Internal Investigations <ul style="list-style-type: none"> ▪ Intelligence gathering ▪ Law enforcement ▪ Data analytics ▪ Cyber investigation expertise 2. Cyber Investigations 3. Anti-Bribery & Corruption <ul style="list-style-type: none"> ▪ UK Bribery Act 4. Assets Searches & Recovery 5. Misuse of Intellectual Property 6. Regulatory Investigations 7. Monitorships <ul style="list-style-type: none"> ▪ Business monitoring programs to identify and control fraudulent or unethical activity 8. Litigation & Disputes
<p style="text-align: center;">NIFA</p> <ol style="list-style-type: none"> 2. Commercial/Fraud <ul style="list-style-type: none"> ▪ Contract disputes ▪ Expert determinations 3. Criminal <ul style="list-style-type: none"> ▪ Theft acts offences ▪ Fraud prevention, detection and measurements ▪ Identity theft 4. Professional Negligence <ul style="list-style-type: none"> ▪ Auditors/ Accountants/ Tax negligence 5. Insurance Claims <ul style="list-style-type: none"> ▪ Claims evaluation ▪ Investigation of fraudulent claims ▪ Loss of profit/consequential

Appendix 2: Literature on Forensic Accounting

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
Rezaee et al. (1992)	Forensic Accounting in the Curriculum To explore the need for coverage of forensic accounting in the accounting curriculum To examine the benefits of integrating forensic accounting into the 150-hour accounting programme	Not stated Descriptive	Reviewing articles, and report	Not stated (US)	Not enough coverage of forensic accounting in accounting curriculum provided by the higher education. Benefits to the student: i. offer a rewarding career ii. continuous life-long learning iii. career development and promotion
Rezaee et al. (2004)	Forensic accounting education: A survey of academicians and practitioners To gather opinions from academicians and practitioners relates to the importance, relevance, and delivery of forensic accounting education.	Not stated Descriptive	A content analysis (21 forensic accounting syllabi) and a nationwide survey (accounting academicians and practicing CPAs)	Accounting academicians and CPA practitioners (US)	More universities are planning to offer a forensic accounting course. Most of the respondents agreed that forensic accounting is important to be integrated. The business community and the accounting profession are concerned with the accounting scandals, the demand for forensic accounting practices increased.
Schneider (2004)	Exploring the role of private-sector, financial investigative agencies in combating money laundering in Canada	Not stated Descriptive	Not stated	Not stated (Canada)	Recommend the government: To take the lead in developing formal policies and programs to promote a greater role of FIA.

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
	To explore the role played by private sector financial investigative agencies (FIA) in combating money laundering in Canada and abroad.				To outsource the intelligence gathering and investigative functions to FIA. The private-sector forensic accounting, investigative and consulting expertise satisfies the criteria required to combat financial crimes such as level of experience and expertise, and service lines (proactive, prevention and detection), which unfulfilled by public police.
Apostolou & Crumbley (2005)	The expanding role of the forensic accountant To analyse the demand for forensic accountants to supplement the efforts of auditors	Not stated Descriptive	Reviewing literature	Not stated (US)	The demand for using forensic accountants in detecting fraud is continuing supplement to auditors.
Ramaswamy (2005)	Corporate governance and the forensic accountant To analyse the relationship between corporate governance, forensic accounting, and financial reporting misconduct.	Not stated Descriptive	Reviewing literature	Not stated (US)	The forensic accountants can make a significant contribution in the following areas; corporate governance, preventing fraud, creating a positive working environment, establishing effective lines of communication, vigilant oversight, establishing consequences, and fraud investigations.
Bierstaker et al. (2006)	Accountants' perceptions regarding fraud detection and prevention methods To examine the extent to which accountants, internal auditors, and certified fraud	Not stated Descriptive	A survey	86 accountants, internal auditors and certified fraud examiners (US)	Forensic accountants, discovery sampling, data mining and digital analysis software are not often used but had high ratings of effectiveness (may be due to lack of resources). Common methods used include firewalls, virus and password, and review and improve internal control. Smaller firms tend to

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
	examiners used fraud prevention and detection methods, and their perception regarding the effectiveness of those methods.				not invest in fraud and detection methodology (maybe due to the costs). The larger firm under-utilised the anti-fraud methods and software. The cost and benefit trade off in mandating organisational use of forensic accountants may be highly considered by regulators.
Houck et al. (2006)	Forensic Accounting as an Investigative Tool Developing a Model Curriculum for Fraud and Forensic Accounting To analyse the effectiveness of forensic accounting skills in fraud investigations.	Not stated Descriptive	Reviewing literature, and reports	Not stated (US)	Essential skills and abilities are needed in developing a model for fraud and forensic accounting. The Technical Working Group for Education in Fraud and Forensic Accounting (TWGED-FFA) developed a model curriculum for fraud and forensic accounting that identifies areas of knowledge, skills, and abilities necessary to enter the field given the multiple career paths. This will provide future accountants to effectively, and efficiently investigate fraud and other illegal activities.
Rosen (2006)	CAP Forum on Forensic Accounting in the Post-Enron World Forensic Accounting: Where and When Headed? To explain the important skills to be a forensic accountant particularly as an expert witness in court cases.	Not stated Descriptive	Reviewing literature, and reports	Not stated (Canada)	High demand of financial investigation skills (forensic accountant) particularly in non-litigation areas. For example appointed as a special investigator under the Education Act or Public Hospitals Act to examine the financial matters which required identifying and mastering unique/special issues quickly (in depth knowledge, objectivity, and professional scepticism, thinking skills, communication). The need to design and implement the education and skills for a forensic accountant such as case scenario based. Required a significant investment by

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
					higher education to revise accounting programmes.
Nunn et al. (2006)	Forensic accountants: Financial investigators To examine the necessary skills to become a forensic accountant.	Not stated Descriptive	Reviewing literature, and reports	Not stated (US)	Forensic accountants need to have many skills (experience, communication, accounting, auditing, taxation, business operations and management, internal control, interpersonal relationships, and people) besides specialized education and training. High demand for forensic accountants. For example, experience in dealing with a complex fraud case in law enforcement for several years may provide valuable knowledge.
Ahmad (2007)	Forensic accounting courses in Malaysia To describe the development of the forensic accounting model in the joint program of the government agency namely Anti-Corruption Agency (ACA) and a higher institution.	Not stated Descriptive	Reviewing literature and the forensic accounting course that has been conducted	Not stated (Malaysia)	Using forensic accounting techniques, knowledge and skills in investigative methods will enhance the investigation of fraud, bribery and other corrupt practices. The components of the forensic accounting course include financial statement preparation and analysis, accounting standard, companies act and other guidelines, and forensic accounting and financial fraud (via formal instruction, presentation and case studies). Important to the agency (ACA) to ensure the capabilities of the staff are well-equipped in dealing with sophisticated illegal activities.
Albrecht et al. (2008)	Current trends in fraud and its detection To discuss the basic nature of fraud and the role of auditors and examine the	Not state Descriptive	Reviewing the literature, standards, and reports	Not stated (US)	Fraud audits can provide more reasonable assurance in financial statement fraud rather than GAAS audits (made a table comparison). Fraud audits more expensive than traditional audits, but can be embedded in auditor training and engagement practices (using

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
	impact of the current financial statement fraud.				computer-relational databases, queries and macros/scripting to determine sampling. The fraud triangle as a fundamental need to be considered in long term solutions in fraud.
Boys (2008)	Forensic Accounting in New Zealand: Exploring the gap between education and practice To identify the gap between what forensic practitioners identify as important skills and capabilities and the learning outcomes and competencies of accounting education.	Not stated Descriptive	A survey -qualitative data (the skills and job of forensic accountants, and explicit opinions where to acquire such skills) Using a 5 point Lickert scale A secondary data (current admission policy and the Statement of Learning Outcomes No. 1-10)	30 respondents of forensic specialists attending a New Zealand Institute of Chartered Accountants (NZICA) seminar and Serious Fraud Office (SFO) (New Zealand)	Forensic accounting is a growing specialization in accounting. Need technical skills and expertise in litigation support and fraud investigation. No specific provision in forensic accounting education as a pathway to gain admission to the professional body. Higher institutions need to consider the demand of expertise to fill the gap. For instance, provide specialized programmes in specialist areas beyond the undergraduate academic level as a path to professional bodies. Respondents believed the skills and job training are important. The skills are acquired through education and job training. Currently depend on the US based association (AFCE) to gain training, seminar and professional certification.
Gray (2008)	Forensic accounting and auditing: compared and contrasted to traditional accounting and auditing	Not stated Descriptive	Reviewing literature	Not stated (US)	Have similar objectives but different roles, knowledge and skills (auditor responsible for error identification and prevention, and forensic accountants responsible for fraud identification). Forensic accountants as a

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
	To explain the forensic science and fraud symptoms, compare traditional accounting and auditing by presenting criminalists, expert testimony and corporate governance.				combination of an auditor and private investigators (with skills and knowledge in investigative, research, law, quantitative methods, finance, auditing, accounting, law enforcement officer insights, organizational behaviour, and psychology). In public sector employed by the FBI, CIA, IRS, Federal Trade Commission, Homeland Security, and Governmental Accountability Office (focus on the white collar crime). In private sector employed by the bank, insurance, criminal court hearing (expert witness). Forensic accounting standards evolve from courts of law and financial accounting governed by the SEC. Forensic accountants practise criminalistics in computer and document related evidence. Specialised audit techniques in fraud cases include supervising, search warrant, surveillance, source and application of funds, and tips similar to anonymous complaints-the most successful techniques).
Pearson & Singleton (2008)	Fraud and forensic accounting in digital environment To analyse the role of technologies and digital data in perpetrating and detecting fraud activities.	Not stated Descriptive	Reviewing literature	Not stated (US)	Perpetrating; -Increased usage of information technology (growth of Internet and expansion in business) -Cybercrime/computer fraud (unauthorized intrusion, credit card fraud, extortion, money laundering, and identity theft) Detecting; -Internal audit department and public accounting firms use software for data analytics and data mining (dedicated staff, using 'macros' to find 'red flags').

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
					-Need to have cyber-forensic skills and knowledge (still a relatively recent phenomenon, growing rapidly, traditional accounting education doesn't have educational provisions-cybercrime prevention, detection, investigation and remediation, and critical component such as Certified Information Systems Auditor and similar background). Most accounting programs include the element of fraud examination and forensic accounting in the curricula but related information technology content also is needed to be embedded.
Heitger & Heitger (2008)	<p>Incorporating forensic accounting and litigation advisory services into the classroom</p> <p>To highlight the litigation support and expert witness in forensic accounting, and issues on developing forensic accounting courses.</p>	<p>Not stated</p> <p>Descriptive</p>	Reviewing literature	Not stated (US)	<p>The litigation support and expert witness (one of the major source revenue) required forensic accountants to provide varieties of information and advice to attorney –either as fact witness or expert witness. Some of accounting knowledge in forensic accounting; cost behaviour, differential/incremental costs, the matching concept, and consistency. Students need to equip good accounting knowledge, and communication skills to become forensic accounting litigation support specialists. The universities need to support by providing the necessary knowledge based, skills (essential foundations), and a capstone experience for the students include in an effective course.</p>

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
Digabriele (2008)	<p>An empirical investigation of the relevant skills of forensic accountants</p> <p>To investigate whether views of the relevant skills of forensic accountants differ among forensic accounting practitioners, accounting academicians, and users of forensic accounting services.</p>	<p>Not stated</p> <p>Descriptive</p>	<p>A web based survey</p> <p>A 5 point Lickert scale</p>	<p>1,500 random samples of accounting academics, forensic accounting practitioners, and users of forensic accounting services</p> <p>(US)</p>	<p>Increasing demand of forensic accounting needs attention from universities. Both academicians and practitioners have the same view that critical thinking, unstructured problem solving, investigative flexibility, analytical proficiency, and legal knowledge are vital skills (changed from a narrow approach to holistic technique). The most important skill is a deductive analysis while composure is the least. The outcome should be useful for developing forensic accounting curricula by identifying the proficiencies that need to be merged with course content.</p>
Newman (2009)	<p>Computer forensic fraud investigations</p> <p>To explain the importance of using computer forensic techniques in fraud investigations.</p>	<p>Not stated</p> <p>Descriptive</p>	<p>Reviewing literature</p>	<p>Not stated</p> <p>(US)</p>	<p>Computer forensic techniques can be used in investigations of fraud involving digital device, identity theft, and fraud investigation. Be able to identify the location of financial accounts and others assets, prove the source and disposition monies, conceal the true nature of fraudulent transactions, and identify illegal income.</p>
Smith, Crumbley (2009)	<p>How Divergent Are Pedagogical Views Toward the Fraud/Forensic Accounting Curriculum</p> <p>To assist academicians in developing fraud/forensic accounting curricula in the future.</p>	<p>Not stated</p> <p>Descriptive</p>	<p>An online survey</p>	<p>111 of academicians (US, UK, Australia, Hong Kong and Lebanon) in fraud/ forensic accounting courses</p>	<p>Most of content of the curricula related to fraud examination areas not wider-ranging forensic accounting. Other than financial statement fraud, digital investigations, criminology and litigation services are not being covered. Need to the differences between fraud examination and forensic accounting. Suggest revising such program based on fraud model, a more wide-ranging forensic model, or a combination of both</p>

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
				(US)	approaches to ensure meeting the need to the profession.
DiGabriele (2009)	<p>Implications of regulatory prescriptions and audit standards on the evolution of forensic accounting in the audit process</p> <p>To determine the level of agreements among academics, auditors, and forensic accountant regarding the current environmental framework to merge forensic accounting and auditing.</p>	<p>Not stated</p> <p>Descriptive</p>	<p>A web based survey</p> <p>A 5 point Lickert- scale, ANOVA test, and two tailed tests</p>	<p>1,500 random samples of accounting academics, forensic accounting practitioners, and auditors</p> <p>(US)</p>	<p>The three groups of respondents agreed to the survey statements except the statement that brainstorming sufficiently addresses the discovery of fraud (SAS No.99). Some of the survey statements; the current regulatory environment increased the need for auditors to possess forensic accounting skills, exercised professional scepticism, future audit approach-auditor's ability to detect and deter fraud, forensic accounting procedures should be included in the current audit programs, audit firm using forensic audit techniques would have a positive valuation impact on audit, the addition of forensic auditing helps to fulfil the expectation gap, the addition of forensic services standard would be a more complete step beside SAS No.99, the increase regulatory environment, SAS 99, Sarbox, PCAOB has pushed toward a convergence of the financial auditing and forensic accounting philosophy. Forensic accounting has a place in the audit process and need to add some of the skills to their professional profile as changed in the audit market (through continuing professional education organizations and universities that increased offering the courses). Future research may use experimental design to reconcile the current study.</p>

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
Buckhoff et al. (2010)	<p>A Fraud Audit: Do You Need One?</p> <p>To differentiate between a fraud audit and a financial statement audit.</p>	<p>Not stated</p> <p>Descriptive</p>	Not stated	<p>Not stated</p> <p>(US)</p>	<p>External auditors are responsible to detect financial statement fraud but not for misappropriation of assets fraud (outside the scope). The fraud audit has primary objective; examining, identifying weaknesses, anyone who manipulated or exploited in the system of internal controls. The fraud auditor should be a Certified Fraud Examiner or Certified in Financial Forensic. Many companies mistakenly assume that external auditors do the fraud audit specifically to discover misappropriation of assets.</p>
McMullen & Sanchez (2010)	<p>A Preliminary Investigation of the Necessary Skills, Education Requirements, and Training Requirements for Forensic Accountants</p> <p>To investigate the necessary skills, education, requirements for forensic accountants.</p>	<p>Not stated</p> <p>Descriptive</p>	A survey a 7 point Lickert-scale	<p>Audit partners of Big 4, accounting firms and practitioners (Certified Fraud Examiner)</p> <p>(US)</p>	<p>Respondents agreed that sixteen listed skills are important to become forensic accountants as well as ten characteristics. The important skills are analytical, basic accounting, problem solving and data analysis. The important characteristics are persistent, scepticism, puzzle, and people skills. Other than accounting degree, other degrees considered most appropriate are computer information systems; economics, legal studies and other Demand for forensic accountants will be higher in the future or increase in the next 10 years. The most important software tool used is data mining compared to ACL, Interactive Data Extraction and Analysis (IDEA) and digital evidence recovery. Universities and firm training should respond by appropriate curricula and training programs, respectively.</p>

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
Ibex & Grippo (2011)	Forensic Accounting: Should It Be A Required Course For Accounting Majors? To examine the important to include forensic accounting skills and attributes in accounting/auditing programs	Not stated Descriptive	Not stated	Not stated (US)	Suggest that the skills and attributes to become a good forensic accountant specifically in the litigation support cannot be acquired in such course (auditing). For example, experiences and strong communication skills must be together in dealing with people and their attitudes. As a result, need to include related skills such as communication skills, independence, objectivity particularly regards to litigation issues in forensic accounting education.
Huber (2012)	Is Forensic Accounting in the United States Becoming a Profession? To explore the possibility of forensic accounting as a profession in its own right.	Attribute Model ; -identify attributes, traits, categories, characteristics, or dimension of professions Descriptive	Content analysis	Not stated (US)	Forensic accounting is considered as a profession as based on the attribute model, forensic accounting meets most of the attributes (education, training and CPE, professional bodies, certification as a symbol, examinations, code of ethics and independence. However, other factors such as public recognition and government intervention (law and standard) need to be considered.
Muehlmann et al. (2012)	The Use of Forensic Accounting Experts in Tax Cases as Identified in Court Opinions To examine the use of forensic accounting experts in tax litigation according to the judges' opinions.	Not stated Descriptive	Archival; Step 1: Select and retrieve electronic tax research platform indicated the involvement of a forensic accountant	84 federal and 28 state reported tax (US)	Potential types of assignments by forensic accountants; fraud investigation (second most found), regulatory/government compliance (the most found), commercial damages (third most found), personal economic damages and business valuation (not found-assistance of expert witness). The use of forensic accounting experts in tax litigation is an emerging field (a large increase in forensic accountants' expert testimony) with 80%

Author/s (Year)	Title/Aims	Theoretical Perspective	Method	Sample Size (Country)	Findings
			Step 2: Detailed review whether forensic accountant involved Step 3: Analysed the case data		reported cases using forensic accounting from 2001-2010. In the judges' written opinion, forensic accountant (expert witness) is effective (hired by taxpayers). Overall, half of the forensic accountants were considered effective by the judges. Some of the reasons not effective; work performed not relevant, insufficient time to complete, and not performed properly.

Appendix 3: Literature on Public Sector Fraud in the UK

Author (s) (Year)	Title/Aims	Theoretical perspective	Method	Populations	Findings
Doig (1993)	<p>‘Someone Else's Money’: Learning from Economic Crime in the Public Sector</p> <p>To analyse the developments relating to the issues of fraud and corruption within the Property Services Agency (PSA)</p>	<p>Not stated</p> <p>Descriptive</p>	Case study: Property Services Agency	Property Services Agency	<p>The issues of prevention, detection, investigation, and reform in PSA relate to fraud and corruption could only be addressed when senior management had the self-determined will and authority to do. A lesson to other public sector not to overlook internal fraud particularly employees with the authority to make a decision, and management is responsible to ensure procedures, and mechanism to prevent and detect fraud is in place.</p>
Doig (1997)	<p>Local authorities and housing benefit: Cost and control of fraud</p> <p>To analyse how housing benefit and related fraud have become an issue of concern by reviewing strategies, and proposed legislation in a local government context.</p>	<p>Not stated</p> <p>Descriptive</p>	Analyse and review various government reports, inquiries, and policies.	Local government (UK)	<p>Using the national data matching scheme by the Audit Commission (AC) improved the fraud detection but is not the ultimate solution. The situation of having fraud investigation is very complex as may involve many agencies, the political party that controls the government, and adequate resources.</p>
Doig et al. (2001)	<p>New Public Management, Old Populism and the Policing of Fraud</p> <p>To review the development of the policing of fraud (staffing, activities, and priorities of the government)</p>	<p>Not stated</p> <p>Descriptive</p>	A survey and face to face interviews (5 mainland forces-based on the size, and activities)	52 civilian police forces (police forces, other fraud squads- Ministry of Defence police, and offshore	<p>Fraud is considerably not the core priority; not the Home Office objective, and not a force performance measure (except one force). Fraud squads subject to cuts and restraints; some force dissolve their fraud squads or joining to larger units. A gap between resources to investigate fraud and the value of fraud cases. Lack of staff and resources. Recommend that access to information and intelligence on a regional or</p>

Author (s) (Year)	Title/Aims	Theoretical perspective	Method	Populations	Findings
	-to access the implications for the future policing of fraud			police fraud squads)	inter-force basis is needed to be effective and efficient for fraud investigations. An option in focus privatization of fraud. The New Public Management and Old Populism don't have a significant impact to the policing objective relating to the fraud.
Button et al.(2007)	<p>New directions in policing fraud: The emergence of the counter fraud specialist in the United Kingdom</p> <p>-to provide basic descriptive data about CFS, characteristics.</p> <p>To analyse issues raised by the growth of CFS, the possible emergence of an embryonic 'fraud police', the indirect 'load shedding', and the governance of CFS.</p>	<p>Not stated</p> <p>Categorisation: The work of CFS, demographic, profile of CFS, working hours, experience during fraud investigations, the governance and status of CFS, and prospects of CFS</p> <p>Descriptive</p>	<p>A survey & semi-structured interview (Consultation with NHSCFSMS)</p> <p>E-mail distribution lists of the NHNSCFSMS, London Fraud Investigators Group, the CFAB database, the address of local authority fraud investigation teams, the details of attendees at annual Institute of Counter Fraud Specialists Conference</p>	<p>Public sector (government departments, executive agencies, and non-departmental bodies)</p> <p>FTSE 100 companies</p> <p>Counter fraud specialist (CFS)-mostly in public sector</p> <p>Counter fraud personnel in the police, local authorities, the NHS, government department and agencies, and other relevant fraud bodies</p>	<p>The emergence of CFS is seen as the most common type fraud investigators. Many CFS are new to the work, undertake investigative related functions, and normal working hours (9-5). Some experience verbal abuse, threatened with violence or actual assault. The status and future governance still uncertain until the actual Government proposals in response to the Fraud Review Team. Significant opportunities for the CFS to enhance their status and expand their operations. One of the core functions of CFS is the investigation of fraud and related offences.</p>

Author (s) (Year)	Title/Aims	Theoretical perspective	Method	Populations	Findings
			(Total 1,866 respondents) Quantitative (SPSS) and qualitative		
Levi et al. (2007)	<p>The Nature , Extent and Economic Impact of Fraud in the UK</p> <p>To determine the nature, extent, and cost of fraud to the public and private sectors.</p> <p>To access critically the availability and quality of existing evidence on fraud.</p> <p>To recommend appropriate strategies to facilitate the comprehensive and consistent recording of data on fraud.</p>	Not stated Descriptive	Review publicly available information on fraud in the UK (sources throughout the public, private sectors, and academic journals)	Both public and private sectors	<p>Many academic fraud studies, details of the methodology used are typically lacking (fraud in private sector appears to constitute ‘research’). Estimating the extent of fraud is not centralised (substantial and varied data about many types of fraud are available). Based on the best evidence available, fraud losses in 2005 for business in the financial service sector (£1.005 billion), business in the non-financial sector (£0.934 billion), private/individuals-very little intentions in any of the studies (£2.75 billion), public bodies at the national level-data from NHSCFSMS and NFI (£6.434 billion-with tax fraud is the highest), and public bodies at the local level (£0.004 billion). However, the stated fraud loss figure is merely indicative due to sources of data neither mutually exclusive nor collectively exhaustive (many high cases that appear to meet the criteria of criminal fraud are investigated by forensic accounting and law firms, and treated as civil matters for litigation. The study recommends that future reporting and recording fraud should have a central body, a reasonably well-resourced and improved study of fraud as what stated in the National Fraud Reporting Centre (NFRC).</p>

Author (s) (Year)	Title/Aims	Theoretical perspective	Method	Populations	Findings
Levi & Burrows (2007)	<p>Measuring the Impact of Fraud in the UK: A Conceptual and Empirical Journey</p> <p>To examine the conceptual and empirical underpinnings of data on the cost of fraud</p>	<p>Rapid evidence assessment (REA)</p> <p>Categorisation: Losses affecting the private sector, losses affecting the public sector, overall fraud, defining fraud</p> <p>Descriptive</p>	Review publicly available information on fraud in the UK (sources throughout the public, private sectors, and academic journals)	Both public and private sectors	The process of compiling, testing, and aggregating data is difficult. A true picture of fraud is a chimera but it can be realized. Similar to the Fraud Review 2006, the establishment of a NFRC is at the right time (Canada and the US use the model). Suggested that the outcome should cover the apprehension and detection of the perpetrators, and fraud prevention. A possibility that the work of police and other central bodies might not meet the rising of fraud cases. This gap refers to the constraint of resources by the police (tactical and strategic approach) to investigate fraud and the public who expect something identifiable in the fraud cases. Views that fraud is a very significant problem and the cost, level of significance may remain high in the future.
Doig & Macaulay (2008)	<p>Decades, Directions and the Fraud Review: Addressing the Future of Public Sector Fraud?</p> <p>To review the findings of research conducted in 1995 on the investigation of fraud by police and the public sector</p> <p>To seek recommendations /changes based on the Fraud Review 2006 as highlighted in the research conducted in 1995</p>	<p>Not stated</p> <p>Descriptive</p>	Analyse and review previous authors' research, various government reports and policies	Public sector	Action taken by the government (establishment of Fraud Review 2006) aligns with the findings of the author's research in 1995 that the public sector will continue to use their own resources in dealing with fraud. The Fraud Review 2006 emphasises that it will not replace the existing strategies but to assist in coordinating the approach taken.

Author (s) (Year)	Title/Aims	Theoretical perspective	Method	Populations	Findings
Button et al. (2009)	<p>Fraud typologies and victims of fraud literature review</p> <p>To review profiles a wide range of frauds which affect individuals and small business</p>	<p>Not stated</p> <p>Descriptive</p>	<p>Review of reports and literature</p> <p>(UK)</p>	Fraud among individuals and small business	<p>A wide range of techniques used to commit frauds (identity fraud-hack, operate in jurisdictions where they are unlikely to be bothered by law enforcement). The profile of victims varied (mass marketing fraud does not attract one type of victim- men, women, the old, and the young tend to fall for different variations). Low reporting of identity fraud due to: the victim may not know they have been defrauded, feel partly responsible, embarrassment, low financial loss, the ambiguity of fraud, the attitude of statutory bodies, and confusion. The major impacts include financial losses, lost employment, emotional impacts, health problems, disintegration of the family, self-blame, and behavioural changes. Author mentioned that compared to many other crimes, fraud is relatively neglected by researchers (Levi, 2008).</p>
Doig & Levi (2009)	<p>Inter-agency work and the UK public sector investigation of fraud, 1996–2006: joined-up rhetoric and disjointed reality</p> <p>To explore the shifting rhetoric and on-the- ground efforts to escape departmental silos in order to address the fraud problem and fraudsters more efficiently and effectively via joint working.</p>	<p>Not stated</p> <p>Descriptive</p>	A review of government reports, policies, and previous research	Public Sector	<p>Efforts at joined up working against fraud contradict by the dominance of the related bodies, and the need to meet the intra-departmental objectives and targets. The joined up working having problem in funding, cycles of organizational change, and often superseding or displacing reforms in implementation. Suggest having a combined function to address the issues of fraud.</p>

Author (s) (Year)	Title/Aims	Theoretical perspective	Method	Populations	Findings
Button & Brooks (2009)	<p>“Mind the gap”, progress towards developing anti-fraud culture strategies in UK central government bodies</p> <p>To assess the extent and quality of anti-fraud culture strategies in the UK central government bodies.</p>		<p>A survey (close and open answer)</p> <p>Analysis upon HM treasury survey</p>	338 (government department-ministry and non-ministry, executive agencies, and executive NDPB)	Significant numbers of central public bodies lack of anti-fraud cultural strategies (staff awareness training, and screening procedures) - discretion in policy and practice, different approaches, and commitment. The NHSCFSMS is considered a very successful counter fraud strategy (saving from fraud of £811 million- 12:1 return on investment). Most of fraud committed by internal parties. Suggest having a central government resource to advise, and inspect the standard of the counter fraud strategies.
Gee et al. (2009)	<p>The financial cost of fraud</p> <p>To examine the measurement of fraud and fraud losses globally</p>	<p>Not stated</p> <p>Descriptive</p>	Reviewed 132 exercises to accurately measure fraud and error losses covering 32 different types of expenditure	44 organisations from 9 countries (Europe, North America, Australia and New Zealand, and none were found in Asia and Africa)	Losses to fraud and error can be treated as a business cost (can be tracked and reduced). The work to measure the losses can be high costs-effective (15% of average fraud losses is reduced-example in the UK, and US). The UK’s NHS-60% (1998-2006); the US department for Education-35% (2001-2005); the US department of Agriculture-28% (2002-2004), and the UK’s DWP-50% (1997/98-2005/06).With the benefit of accurate information the nature and extent of fraud, losses can be reduced significantly.
Gannon & Doig (2010)	<p>Ducking the answer? Fraud strategies and police resources</p> <p>To analyse and review the strategies, and resources of police in dealing with fraud pre and post Fraud Review 2006</p>	<p>Not stated</p> <p>Categorisation: Structure, policy, caseload, and performance.</p> <p>Descriptive</p>	<p>A survey.</p> <p>Semi-structured interviews with selected respondents</p>	47 civilian police forces (Regional, British Transport Police, and Crown Dependencies	The Fraud Review unable to address the issue in optimizing the police force for example number of staff, and training in fraud investigation are needed. The role of the Police Fraud Squad seems to disappear in the current structures. Some specialist resources still in operation but located in multifaceted departments and more focus on asset recovery, and organized crime fraud rather than fraud investigations.

Author (s) (Year)	Title/Aims	Theoretical perspective	Method	Populations	Findings
				Chief Constable's office	
Gee et al. (2010)	<p>The financial cost of UK public sector fraud: a less painful way to reduce public expenditure</p> <p>To estimate the financial costs of fraud in the UK (public expenditure, taxation revenues, both at local and national levels) and give recommendations</p>	<p>Not stated</p> <p>Descriptive</p>	<p>An extensive review of a survey based on the previous 'global survey percentage' of 'The Financial Costs of Fraud Report (2009) and 'The Financial Cost of Health Care Fraud Report (2010).</p>	Public sector	<p>Estimated that the financial costs of the UK public sector fraud more than £36 billion. The UK is probably no worse or no better than most countries (estimated losing £22.407 billion in public sector expenditure), uncollected tax revenue of £16 billion as a result of fraud-related behaviour. Example of fraud losses can be reduced: The NHS-reduced up to 60% between 1998 and 2006, the DWP-reduced up to 50% between the periods of 1997/98-2005/06. The approach of most of the UK public sector to fraud has been reactive (detecting, investigate, and prosecute) which does not address the financial losses. Suggests the need for a body- Public Sector Counter Fraud Agency linked to the department (Treasury) and with defined remit, authority, and resources to work on reducing losses. A program of accurate measurement of losses should be implemented major area of public expenditure.</p>
Button (2011)	<p>Fraud investigation and the 'flawed architecture' of counter fraud entities in the United Kingdom</p> <p>To analyse the foundations of counter fraud entities in</p>	<p>Not stated</p> <p>Categorisation: Structure and legal status, history and culture, functional and geographical</p>	<p>A survey</p> <p>Semi-structured interview</p> <p>Review public documents</p>	Various counter fraud personnel (police, local authorities, the NHS, government department and agencies,	<p>A very diverse range of counter fraud entities (differs capabilities, and the architecture is subject to change) quangos, government departments or parts of them. The government decided to reduce the number of quangos through mergers, abolition, and change of status (2010) including Audit Commission-National Fraud Initiative, audit, Office for Trading merged with the</p>

Author (s) (Year)	Title/Aims	Theoretical perspective	Method	Populations	Findings
	investigating fraud effectively.	domination, funding and capacity, operational independence, and the ebb and flow or organization reform. Descriptive		private sector, and other relevant fraud bodies) 28 interviews Public sector (government departments, executive agencies, and non-departmental bodies) FTSE 100 companies Counter fraud specialist (CFS)-mostly in public sector Counter fraud personnel in the police, local authorities, the NHS, government department and agencies, and other relevant fraud bodies	Competition Commission, and Serious Organized Crime Agency (SOCA) merged with to create the National Crime Agency. Fraud is a major problem but the counter fraud entities are fragmented with varying capabilities, and resilience (different levels of competency, resources (prone to cuts), and the security of the resources-some are good, average, and poor). A CFS has specialist knowledge in law related to fraud and benefits law, and involved in preventive work (vary among organization - NHS is very committed). A number of criminal prosecution in court does vary (CFS responsibility) where CFS prepare and give to their own prosecution department (NHS and DWP) or to the police. The establishment of the NHS Counter Fraud and Security Management Service (NHSCFSMS), and the emergence of CFS across central, local government, and private sector accredited by the Counter Fraud Professional Accreditation Board (CFACB). The reasons include the failure of the police to take fraud seriously; an attitude towards fraud is increased in the public sector (mid-1900s), and desire for professionalization. Fraud in local authorities might be investigated completely by local authorities, or hire private investigators, a partnership with the police, or totally by the police. Local CFS (must have ACFS) is a legal requirement in the NHS but not in other organizations. The salary in DWP is the lowest compared to the NHS and local authority. Further

Author (s) (Year)	Title/Aims	Theoretical perspective	Method	Populations	Findings
				(semi-structured interview)	research to optimize in fraud investigation is needed.
Lane (2011)	<p>Are local authority fraud teams fit for purpose?</p> <p>To analyse fraud investigation practices in London local governments, and compare with the Department for Work and Pensions (DWP), and National Health Services (NHS).</p>	<p>Not stated</p> <p>Descriptive</p>	A survey	33 officers responsible for fraud in all London boroughs (UK)	<p>Most of the London boroughs have their own corporate fraud team same as DWP and NHS. NAO measured the anti-fraud activities, and Audit Commission (AC) together with the CIPFA provides guidelines ('good practice'). No standard of anti-fraud operations and investigations approaches among local government. Most of the fraud officers had the Counter Fraud Specialists (CFS) qualification although no minimum competency standard at national level is being set up.</p> <p>Good practice in interviewing, case screening, case supervision, and training development. Surveillance and forensic computer examination skills; still lack of use and not enough training. More research to study the local government fraud outside the London boroughs.</p>
Button et al. (2011)	<p>Measuring the cost of fraud: an opportunity for the new competitive advantage</p> <p>To provide evidence by analysing 132 fraud risk management exercises.</p>	<p>Not stated</p> <p>Descriptive</p>	Analysed 132 fraud risk measurement exercises from 9 countries of different sectors. Determine the percentage loss rate (PLR) and the fraud	44 organisations from nine countries	Fraud and error losses in an organisation should currently be expected to be at least 3%. The PLR when first measured has been found to be 5.40 per cent and 4.61 per cent when last measured, representing an average reduction of just fewer than 15 per cent. The fraud and error can be measured and the greater use of fraud risk measurement and counter fraud strategies can reduce the losses.

Author (s) (Year)	Title/Aims	Theoretical perspective	Method	Populations	Findings
			frequency rate (FFR)-using Excel		
Gee et al. (2012)	<p>The Resilience to Fraud of the Local Government Research Into How Well Local Authorities Protect Themselves</p> <p>To examine how well the UK local government sector protect itself from fraud.</p>	<p>Not stated</p> <p>Descriptive</p>	<p>A survey</p> <p>Self-Assessment Fraud Resilience (SAFR)</p>	72 local authorities	<p>Overall, the local government achieved a mean score of 35.1 of 50.</p> <p>Performed well in the following areas:</p> <ul style="list-style-type: none"> i. have a written counter fraud strategy in place and agreed by the executive authority ii. further investigation arrangement iii. investigation with clear guidance iv. ensure the possible sanctions taken such as disciplinary, civil and criminal <p>Not performed well in the following areas:</p> <ul style="list-style-type: none"> i. estimation of losses for counter fraud resources/budget ii. evaluate the extent of a real anti-fraud culture in organisation iii. estimate the total economic cost of fraud iv. formal relationship with external agencies v. regularly review the effectiveness of counter fraud work against performance indicators

Appendix 4: List of English Local Authorities

Region	Districts/County	Number
Metropolitan		
North West	Manchester, Bolton, Bury, Oldham, Rochdale, Stockport, Tameside, Trafford, Wigan, Liverpool, Knowsley, St Helen, Sefton, Wirral	15
Yorkshire and Humber	Sheffield, Barnsley, Doncaster, Rotherham	4
North East	Newcastle upon Tyne, Gateshead, South Tyneside, North Tyneside, Sunderland	5
West Midlands	Birmingham, Coventry, Dudley, Sandwell, Solihull, Walsall, Wolverhampton	7
Yorkshire and Humber	Leeds, Bradford, Calderdale, Kirklees, Wakefield	5
Total		36
London borough		
London Borough	Barking and Dagenham, Barnet, Bexley, Bromley, Camden, City of London, Croydon, Ealing, Enfield, Greenwich, Hackney, Hammersmith and Fulham, Haringey, Harrow, Havering, Hillingdon, Hounslow, Islington, Kensington and Chelsea, Kingston upon Thames, Lambeth, Lewisham, Merton, Newham, Redbridge, Richmond upon Thames, Southwark, Sutton, Tower Hamlets, Waltham Forest, Wandsworth, Westminster	33
Total		33
Unitary Councils		
East of England	Central Bedfordshire, Luton, Peterborough, Southend-on-Sea, Bedford, Thurrock	6
East Midland	Nottingham, Leicester, Derby, Rutland	4
South West	Cornwall, Bristol, Wiltshire, South Gloucestershire, Plymouth, North Somerset, Swindon, Bath and North East Somerset, Bournemouth, Poole, Torbay, Isles of Scilly	12
North West	Cheshire East, Cheshire West and Chester, Warrington, Halton, Blackpool, Blackburn with Darwen	6
North East	Northumberland, County Durham, Stockton-On-Tees, Middlesbrough, Redcar and Cleveland, Darlington, Hartlepool	7
South East	Slough, Windsor and Maidenhead, West Berkshire, Reading, Wokingham, Portsmouth, Milton Keynes, Brighton & Hove, Medway, Isle of Wight, Bracknell Forest, Southampton	12
Yorkshire and Humber	East Riding of Yorkshire, Hull, York, North Lincolnshire, North East Lincolnshire	5
West Midland	Telford and Wrekin, Herefordshire, Stoke-on-Trent, Shropshire,	4
Total		56
District Councils		
South East	South Bucks, Chiltern, Wycombe, Aylesbury Vale, Hastings, Rother, Wealden, Eastbourne, Lewes, Gosport, Fareham, Winchester, Havant, East Hampshire, Hart, Rushmoor, Basingstoke and Deane, Test Valley, Eastleigh, New Forest, Spelthorne, Runnymede, Surrey Heath, Woking, Elmbridge, Guildford, Waverley, Mole Valley, Epsom	55

	and Ewell, Reigate and Banstead, Tandridge, Worthing, Arun, Chichester, Horsham, Crawley, Mid Sussex, Adur, Oxford, Cherwell, South Oxfordshire, Vale of White Horse, West Oxfordshire	
East of England	Cambridge, South Cambridge, Huntingdonshire, Fenland, East Cambridge, Harlow, Epping Forest, Brentwood, Basildon, Castle Point, Rochford, Maldon, Chelmsford, Uttlesford, Braintree, Colchester, Tendring, Three Rivers, Watford, Hertsmere, Welwyn Hatfield, Broxbourne, East Hertfordshire, Stevenage, North Hertfordshire, St Albans, Dacorum, Norwich, South Norfolk, Great Yarmouth, Broadland, North Norfolk, King's Lynn and West Norfolk, Breckland, Ipswich, Suffolk Coastal, Waveney, Mid Suffolk, Babergh, St Edmundsbury, Forest Heath	41
North West	Barrow-in-Furness, South Lakeland, Copeland, Allerdale, Eden, Carlisle, West Lancashire, Chorley, South Ribble, Fylde, Preston, Wyre, Lancaster, Ribble Valley, South Northamptonshire, Northampton, Daventry, Wellingborough, Kettering, Corby, East Northamptonshire	18
East Midlands	High Peak, Derbyshire Dales, South Derbyshire, Erewash, Amber Valley, North East Derbyshire, Chesterfield, Bolsover, Charnwood, Melton, Harborough, Oadby and Wigston, Blaby, Hinckley and Bosworth, North West Leicestershire, Rushcliffe, Broxtowe, Ashfield, Gedling, Newark and Sherwood, Mansfield, Bassetlaw	29
South West	Exeter, East Devon, Mid Devon, North Devon, Torridge, West Devon, South Hams, Teignbridge, Weymouth and Portland, West Dorset, North Dorset, Purbeck, East Dorset, Christchurch, Gloucester, Tewkesbury, Cheltenham, Cotswold, Stroud, Forest of Dean, South Somerset, Taunton Deane, West Somerset, Sedgemoor, Mendip	25
Yorkshire and Humber	Lincoln, North Kesteven, South Kesteven, South Holland, Boston, East Lindsey, West Lindsey, Selby, Harrogate, Craven, Richmondshire, Hambleton, Ryedale, Scarborough	14
West Midland	North Warwickshire, Nuneaton and Bedworth, Rugby, Stratford-on-Avon, Warwick, Tamworth, Lichfield, Cannock Chase, South Staffordshire, Stafford, Newcastle under-Lyme, Staffordshire Moorlands, East Staffordshire, Worcester, Malvern Hills, Wyre Forest, Bromsgrove, Redditch, Wychavon	19
Total		201
County Councils		
South East	Buckinghamshire, East Sussex, Hampshire, Kent, Oxfordshire, Surrey, West Sussex	7
East of England	Cambridgeshire, Hertfordshire, Norfolk, Suffolk, Essex	5
East Midland	Derbyshire, Leicestershire, Northamptonshire	3
North West	Cumbria, Lancashire	2
South West	Devon, Dorset, Gloucestershire, Somerset	4
Yorkshire and Humber	Lincolnshire, North Yorkshire, Durham	3
West Midland	Warwickshire, Worcestershire, Staffordshire	3

Total		27
Grand Total		353

Appendix 5: Cover Letter

March 2014

«First_Name» «Last_Name»
«Position»
«Address_1»
«Address_2»
«Address_3»
«Postcode»

Dear «Designation» «Last_Name»

Invitation to participate in a survey on forensic accounting services

My name is Mohd Hadafi Sahdan and I am a PhD candidate at the University of Huddersfield. I am conducting research entitled 'Organisational Intention to Use Forensic Accounting Services in Detecting and Preventing Fraud'. The research aims to investigate and explore the current status of using forensic accounting services to detect and prevent fraud.

This research project has been approved by the University of Huddersfield Business School Research Committee. It will take you approximately 15 to 20 minutes to answer all the questions. I would like to assure you that all responses will be kept confidential and no reference will be made to any particular local authority arising from the results of the questionnaire.

I value your time and prompt response to the questionnaire and your kind participation is greatly appreciated. If you require further information about the research project, kindly contact me or my supervisor, Dr. Julie Drake. Please return this survey by 20 April 2014 using the adhesive address label that is included in this envelope.

Thank you very much for taking your time and effort to complete this survey.

Yours faithfully,

Mohd Hadafi Sahdan
PhD Candidate
Business School
University of Huddersfield
HD1 3DH Queensgate
Email: u1171885@hud.ac.uk
Tel: 07429336074

Supervised by;
Julie Drake, BA MA PhD FCA FHEA
Department of Accountancy
Business School
University of Huddersfield
HD1 3DH Queensgate
Email: j.e.drake@hud.ac.uk
Tel: 01484472350

A Survey of Organisational Intention to Use Forensic Accounting Services in Detecting and Preventing Fraud



**Financial Ethics and
Governance Research Group
(FEGReg)**



For the purpose of this research project, the following definition will be used:

Forensic accounting services refer to any external providers such as accounting firms, and specialised forensic accounting firms that applied special skills, investigative skills, techniques, and practical experiences in detecting and preventing fraud as part of their services to organisations.

Fraud refers to an intentional false representation, failing to disclose or abuse of position to make gain, cause loss or expose another to the risk of loss as stipulated in the Fraud Act 2006. Examples of fraud include housing benefit/council tax benefit, procurement, payroll, and internal fraud.

SECTION 1: LOCAL AUTHORITY CHARACTERISTICS

1.1 Please indicate your local authority type

- | | |
|---|---|
| <input type="checkbox"/> English County Council | <input type="checkbox"/> London Borough Council |
| <input type="checkbox"/> Metropolitan Borough Council | <input type="checkbox"/> English District Council |
| <input type="checkbox"/> English Unitary Council | |

1.2 Please indicate the political majority in your local authority

- | | |
|---|---|
| <input type="checkbox"/> Conservative | <input type="checkbox"/> Independent Group |
| <input type="checkbox"/> Labour | <input type="checkbox"/> Other (Please specify) |
| <input type="checkbox"/> Liberal Democrat | _____ |

1.3 Please indicate the current provision of internal audit services in your local authority

- | | |
|--|---|
| <input type="checkbox"/> Internal audit function maintained in-house
(<i>Number of internal audit staff:</i> ____) | <input type="checkbox"/> Internal audit function partially outsourced
(<i>Number of internal audit staff:</i> ____) |
| <input type="checkbox"/> Internal audit function fully outsourced | |
| <input type="checkbox"/> Internal audit function through joint/shared services
(<i>Number of internal audit staff:</i> ____) | |

1.4 Please indicate your local authority's net revenue for the financial year ended 2012/2013

- | | |
|--|--|
| <input type="checkbox"/> Less than £100 million | <input type="checkbox"/> £1,001 million - £1,300 million |
| <input type="checkbox"/> £101 million - £400 million | <input type="checkbox"/> £1,301 million - £1,600 million |
| <input type="checkbox"/> £401 million - £700 million | <input type="checkbox"/> £1,601 million - £1,900 million |
| <input type="checkbox"/> £701 million - £1,000 million | <input type="checkbox"/> More than £1,900 million |

1.5 Please indicate if your local authority has an in-house counter fraud team/unit

- | | | | |
|-----|--------------------------|----|--------------------------|
| Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
|-----|--------------------------|----|--------------------------|

If the answer for Question 1.5 is Yes, please answer the following question (1.6). Otherwise, please directly proceed to the next section (Section 2).

1.6 Please indicate the number of staff in the counter fraud team/unit

<input type="checkbox"/> Less than 10 staff	<input type="checkbox"/> 21-25 staff
<input type="checkbox"/> 10-15 staff	<input type="checkbox"/> 26-30 staff
<input type="checkbox"/> 16-20 staff	<input type="checkbox"/> 31-35 staff
<input type="checkbox"/> 21-25 staff	<input type="checkbox"/> More than 30 staff

SECTION 2: FORENSIC ACCOUNTING SERVICES

2.1 Please identify and rank the five (5) core skills that you think a forensic accountant needs to possess. Please rank your preference from 1 (most preferred) to 5 (least preferred)

<input type="checkbox"/> Auditing skills	<input type="checkbox"/> Problem solving skills
<input type="checkbox"/> Critical/strategic thinking	<input type="checkbox"/> Research skills
<input type="checkbox"/> Effective oral communication	<input type="checkbox"/> Scepticism
<input type="checkbox"/> Effective written communication	<input type="checkbox"/> Simplifying the information
<input type="checkbox"/> Identifying key issues	<input type="checkbox"/> Think like the wrongdoer
<input type="checkbox"/> Investigative ability	<input type="checkbox"/> Understand the goals of the case
<input type="checkbox"/> Investigative intuition	<input type="checkbox"/> Synthesise results of investigations
<input type="checkbox"/> Motivation	<input type="checkbox"/> Other (Please specify)_____

2.2 Is your local authority currently using forensic accounting services or has it previously done so?

Yes ☐ No ☐

If your answer to Question 2.2 is Yes, please answer the following question (2.3). Otherwise, you can proceed to the next section (Section 3).

- 2.3 (a) Please indicate the type(s) of forensic accounting services your local authority **has used (in the last 12 months) or in the past (more than 12 months)**. You may tick more than one box.

Forensic Accounting Services	Used in Last 12 Months	Used More Than 12 Months Ago
Fraud prevention system		
Fraud detection		
Fraud investigations		
Litigation support and expert witness		
Digital forensic including data mining, data imaging and recovery		
Asset tracing and recovery		
Assessing and improving internal control system		
Damage or loss quantification		
Fraud risk management		
Developing regulatory compliance strategies		
Prosecution cases		
Fraud training		
Reviewing current counter-fraud procedures		
Other (Please specify)		

- 2.3 (b) Please indicate the forensic accounting service providers your organization has used and the level of satisfaction with the quality of the provided services by choosing the appropriate number on a scale of 1 (Very Dissatisfied) to 5 (Very Satisfied).

Very Dissatisfied 1	Dissatisfied 2	Uncertain 3	Satisfied 4	Very Satisfied 5
------------------------	-------------------	----------------	----------------	---------------------

<input type="checkbox"/> Big Four accounting firms*	1	2	3	4	5
<input type="checkbox"/> Other (Please specify) _____	1	2	3	4	5

* **Big Four accounting firms refer to KPMG, PwC, Deloitte, and EY**

- 2.3 (c) Please indicate your local authority's intention to use forensic accounting services in the future. In answering, use the following response scale of 1 (Decrease) to 5 (Increase Significantly). Please circle the number corresponding to your level of agreement with the statement.

Decrease 1	Decrease Slightly 2	Uncertain 3	Increase Slightly 4	Increase Significantly 5
---------------	------------------------	----------------	------------------------	-----------------------------

My local authority's intentions to use forensic accounting services to detect and prevent fraud in future will likely... 1 2 3 4 5

SECTION 3: FORENSIC ACCOUNTING SERVICES PERCEPTION FACTORS

Please indicate the extent to which you agree with each of the following statements. In answering, use the following response scale of 1 (Strongly Disagree) to 5 (Strongly Agree) and circle the number corresponding to your level of agreement with each statement.

	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
3.1 The use of forensic accounting services helps to deter fraud	1	2	3	4	5
3.2 The use of forensic accounting services enhances the image of my local authority	1	2	3	4	5
3.3 Forensic accounting services help in the recovery of cash and assets that have been embezzled	1	2	3	4	5
3.4 Forensic accountants have more objectivity and credibility in fraud detection and prevention than internal auditors	1	2	3	4	5
3.5 Forensic accountants have accounting expertise and local authority knowledge in dealing with fraud	1	2	3	4	5
3.6 The use of forensic accounting services can improve internal control system	1	2	3	4	5
3.7 Using forensic accounting services could cause confidentiality issues in my local authority	1	2	3	4	5
3.8 Forensic accounting services are very costly	1	2	3	4	5
3.9 The cost of using forensic accounting services would influence my local authority's decision to use the services	1	2	3	4	5
3.10 My local authority cannot afford the cost of acquiring forensic accounting services	1	2	3	4	5
3.11 Forensic accounting services cannot guarantee fraud detection and prevention	1	2	3	4	5
3.12 It is difficult to evaluate the effectiveness of forensic accounting services to detect and prevent fraud before acquiring the services	1	2	3	4	5
3.13 My local authority is aware of the role of forensic accounting services in fraud detection and prevention	1	2	3	4	5
3.14 My local authority is knowledgeable about the benefits of using forensic accounting services	1	2	3	4	5
3.15 My local authority is knowledgeable about the risks of using forensic accounting services	1	2	3	4	5
3.16 The promotion of forensic accounting services leads my local authority to use the services	1	2	3	4	5
3.17 Forensic accounting firms can provide high quality services	1	2	3	4	5
3.18 The presence of a large number of forensic accounting services providers in the market initiate local authorities to use the services	1	2	3	4	5
3.19 Overall, my local authority perception of forensic accounting is positive	1	2	3	4	5

SECTION 4: FRAUD PERCEPTION FACTORS

Please indicate the extent to which you agree with each of the following statements. In answering, use the following response scale of 1 (Strongly Disagree) to 5 (Strongly Agree) and circle the number corresponding to your level of agreement with each statement.

	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
4.1 If my local authority is a victim of fraud, the...					
i. financial loss will most likely be serious	1	2	3	4	5
ii. effect on local authority image will most likely be serious	1	2	3	4	5
iii. effect on the employee morale will most likely be serious	1	2	3	4	5
iv. effect on the efficiency and productivity in my local authority will most likely be serious	1	2	3	4	5
v. cost of investigation and prosecution will most likely be high	1	2	3	4	5
4.2 My local authority often worries about being a victim of fraud	1	2	3	4	5
4.3 The probability of my local authority being a victim of fraud is very low	1	2	3	4	5
4.4 Compared to other local authorities, my local authority's risk of fraud is lower	1	2	3	4	5
4.5 The creation of the Single Fraud Investigation Service (SFIS) provides benefits to counter fraud activities in my local authority	1	2	3	4	5
4.6 My local authority shares data and fraud intelligence with other local authorities	1	2	3	4	5
4.7 The abolishment of the Audit Commission has had a negative impact on counter fraud activities in my local authority	1	2	3	4	5
4.8 A fraud awareness campaign is an important tool to prevent and deter fraud in my local authority	1	2	3	4	5
4.9 A standard definition of fraud that can be used by all local authorities needs to be developed to establish a more reliable picture of fraud and to make an appropriate allocation of counter fraud resources in my local authority	1	2	3	4	5
4.10 Other local bodies such as the National Health Service (NHS) and the Department for Work and Pensions (DWP) that are considered effective in how they tackle fraud led my local authority to use forensic accounting services	1	2	3	4	5
4.11 The austerity measures introduced by central government have had a negative impact on the resources available for counter fraud activities	1	2	3	4	5
4.12 Lack of counter fraud standards at national level affects my local authority to detect and prevent fraud	1	2	3	4	5
4.13 The judgment of an outside contractor such as a forensic accounting firm towards fraud is more likely to be impartial	1	2	3	4	5

SECTION 5: INTERNAL CONTROL FACTORS

Please indicate the extent to which you agree with each of the following statements. In answering, use the following response scale of 1 (Strongly Disagree) to 5 (Strongly Agree) and circle the number corresponding to your level of agreement with each statement.

	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
5.1	The organisational structure in my local authority supports effective internal control				
5.2	In my local authority, management and employees are assigned appropriate levels of authority and responsibilities to facilitate effective internal control				
5.3	The Audit Committee in my local authority oversees risk management, governance and counter fraud arrangements				
5.4	There is a significant number of independent members within the Audit Committee in my local authority				
5.5	At least one member of the Audit Committee is a financial expert such as a qualified accountant or other financial professional				
5.6	The Audit Committee in my local authority has a regular meeting with internal auditors				
5.7	The Audit Committee in my local authority recommends that we use forensic accounting services in detecting and preventing fraud				
5.8	My local authority has an effective and up-to-date counter fraud strategy				
5.9	In my local authority, the number of staff and resources allocated are adequate to counter fraud				
5.10	In my local authority, those working to counter fraud have received specialist professional training and accreditation				
5.11	The effectiveness of in-house fraud investigation in my local authority is very high				
5.12	It is difficult to estimate the total economic cost of fraud in my local authority				
5.13	My local authority be able to retain (or recruit) people with the necessary skills				
5.14	My local authority evaluates the strength of anti-fraud cultures regularly				

SECTION 6: INSTITUTIONAL AND OTHER FACTORS

Please rate the importance of the following statements in influencing your local authority's decision to use forensic accounting services. In answering, use the following response scale of 1 (Not at All Important) to 5 (Very Important) and circle the number accordingly.

	Not at All Important 1	Not Important 2	Neutral 3	Important 4	Very Important 5
6.1 Directives, rules and policies from central government	1	2	3	4	5
6.2 Initiatives and action plan by central government to reduce fraud cases	1	2	3	4	5
6.3 Reports on fraud issued by the following bodies:					
i. the Audit Commission	1	2	3	4	5
ii. the National Fraud Authority (NFA)	1	2	3	4	5
iii. the Department for Work and Pensions (DWP)	1	2	3	4	5
6.4 The used of forensic accounting services by other local authorities	1	2	3	4	5
6.5 The high rate of success received by other local authorities when using forensic accounting services	1	2	3	4	5
6.6 Recommendations by the professional bodies such as:					
i. the Chartered Institute of Public Finance and Accountancy (CIPFA)	1	2	3	4	5
ii. the Institute of Chartered of Accountants in England and Wales (ICAEW)	1	2	3	4	5
iii. the Institute of Counter Fraud Specialist (ICFS)	1	2	3	4	5
6.7 Recommendations by associations such as:					
i. the Local Government Association (LGA)	1	2	3	4	5
ii. the Society of Local Authority Chief Executives (SOLACE)					
iii. the Public Risk Management Association (Alarm)	1	2	3	4	5
iv. the Local Authority Investigation Officers Group (LAIOG)	1	2	3	4	5
6.8 Pressures from the following stakeholders:					
i. Elected councillors	1	2	3	4	5
ii. Tax payers/local residents/voters	1	2	3	4	5
iii. Top management	1	2	3	4	5
iv. Business partners	1	2	3	4	5
6.9 Recommendations by the external auditors	1	2	3	4	5
6.10 Recommendations by the Audit Commission	1	2	3	4	5
6.11 Recommendations by employees that hold a related professional membership or qualification in accounting and fraud	1	2	3	4	5
6.12 News, publications and discussions on fraud from.....					
i. Television	1	2	3	4	5
ii. Radio	1	2	3	4	5
iii. Newspapers/magazines	1	2	3	4	5
iv. Online news	1	2	3	4	5
v. Online social networking such as LinkedIn, Facebook, Twitter	1	2	3	4	5

SECTION 7: INTENTION TO USE FORENSIC ACCOUNTING SERVICES

The following questions explore your local authority's intention toward using forensic accounting services. It does not matter if your local authority has used forensic accounting services or not.

In answering the following question, use the following response scale of 1 (No Intent to Use) to 5 (Definite Intent to Use) and circle the number corresponding to your level of agreement with the statement.

No Intent to Use 1	Little Intent to Use 2	Don't Know 3	Moderate Intent to Use 4	Definite Intent to Use 5
------------------------------	-------------------------------------	---------------------------	---------------------------------------	---------------------------------------

7.1 Does your local authority intends to use forensic accounting services for fraud detection and prevention? 1 2 3 4 5

In answering the following questions, use the following response scale of 1 (Less Than 6 Months) to 5 (More Than 24 Months) and circle the number corresponding to your level of agreement with each statement.

Less Than 6 Months 1	6-12 Months 2	12-18 Months 3	18-24 Months 4	More Than 24 Months 5
-----------------------------------	-------------------------	--------------------------	--------------------------	------------------------------------

7.2 If your local authority is intending to use forensic accounting services, how soon do you anticipate that it will operationally implemented? 1 2 3 4 5

7.3 My local authority intends to use forensic accounting services for the following types of services:

i. Fraud prevention system	1	2	3	4	5
ii. Fraud detection	1	2	3	4	5
iii. Fraud investigations	1	2	3	4	5
iv. Litigation support and expert witness	1	2	3	4	5
v. Digital forensic including data mining, data imaging and recovery	1	2	3	4	5
vi. Asset tracing and recovery	1	2	3	4	5
vii. Assessing and improving internal control system	1	2	3	4	5
viii. Damage or loss quantification	1	2	3	4	5
ix. Fraud risk management	1	2	3	4	5
x. Developing regulatory compliance strategy	1	2	3	4	5
xi. Prosecution cases	1	2	3	4	5
xii. Fraud training	1	2	3	4	5
xiii. Reviewing current counter-fraud procedures	1	2	3	4	5
xiv. Other (Please specify): _____	1	2	3	4	5

7.4 My local authority intends to use forensic accounting services to detect and prevent fraud for:

i. Housing tenancy fraud	1	2	3	4	5
ii. Payroll fraud	1	2	3	4	5
iii. Council Tax fraud	1	2	3	4	5
iv. Grant fraud	1	2	3	4	5
v. Pension fraud	1	2	3	4	5
vi. Internet fraud/cybercrime	1	2	3	4	5
vii. Internal fraud (including management fraud)	1	2	3	4	5
viii. Other (Please specify): _____	1	2	3	4	5

SECTION 8: PERSONAL PROFILE

8.1 Please indicate your current job title

- ☐ Chief Executive
- ☐ Managing Director
- ☐ Director of Corporate Resources
- ☐ Director of Finance/S 151 Officer
- ☐ Chief /Head /Manager of Internal Audit
- ☐ Chief /Head /Manager of Corporate Fraud Team
- ☐ Other (Please specify)_____

8.2 Please specify your age group

- | | |
|---|---|
| <input type="checkbox"/> Less than 30 years | <input type="checkbox"/> 46-50 years |
| <input type="checkbox"/> 31-35 years | <input type="checkbox"/> 51-55 years |
| <input type="checkbox"/> 36-40 years | <input type="checkbox"/> 55-60 years |
| <input type="checkbox"/> 41-45 years | <input type="checkbox"/> Above 60 years |

8.3 Please specify your academic qualification(s)

- ☐ BA/BSc
- ☐ MA/MSc/MBA
- ☐ Phd/DBA
- ☐ Other (Please specify)_____

8.4 Please specify your membership in the following professional body.

- ☐ The Association of Chartered Certified Accountant (ACCA)
- ☐ The Institute of Chartered Accountants in England and Wales (ICAEW)
- ☐ The Chartered Institute Management Accountant (CIMA)
- ☐ The Chartered Institute of Public Finance and Accountancy (CIPFA)
- ☐ The Association of Certified Public Accountants (CPAUK)
- ☐ The Chartered Institute of Internal Auditors (CIIA)
- ☐ The Institute of Counter Fraud Specialists (ICFS)
- ☐ The Association of Certified Fraud Examiners (ACFE)
- ☐ Other (Please specify)_____

Are there any further comments you would like to make?

.....
.....

End of Survey

Thank you very much for your cooperation in completing this survey

I would be willing to be interviewed for this research project Yes

<input type="checkbox"/>	No	<input type="checkbox"/>
<input type="checkbox"/>	No	<input type="checkbox"/>

I would like to receive a summary of the research findings Yes

Please provide your email address: _____

Appendix 7: Output of Exploratory Factor Analysis (EFA)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.733
Approx. Chi-Square	3664.687
Bartlett's Test of Sphericity	df
	703
	Sig.
	.000

Communalities

	Initial	Extraction
CGT1	1.000	.698
CGT2	1.000	.705
ACM1	1.000	.789
CGT3	1.000	.826
CGT4	1.000	.581
LAM1	1.000	.841
LAM2	1.000	.864
NBP1	1.000	.772
ASC1	1.000	.725
SHT1	1.000	.781
SHT3	1.000	.772
MDN1	1.000	.915
MDN2	1.000	.932
MDN3	1.000	.910
MDN4	1.000	.924
MDN5	1.000	.793
BFT4	1.000	.797
BFT5	1.000	.801
BFT6	1.000	.715
COF1	1.000	.850
COF2	1.000	.887
COF3	1.000	.807
RSK1	1.000	.725
RSK2	1.000	.693
RSK3	1.000	.747
SVF1	1.000	.595
SVF2	1.000	.698
SVF3	1.000	.782
SVF4	1.000	.664
SVF5	1.000	.633
PSF1	1.000	.701
PSF2	1.000	.703
PSF3	1.000	.784
ICR1	1.000	.715
ICR2	1.000	.776
ICR3	1.000	.569
INT	1.000	.870
RecodeInt2	1.000	.872

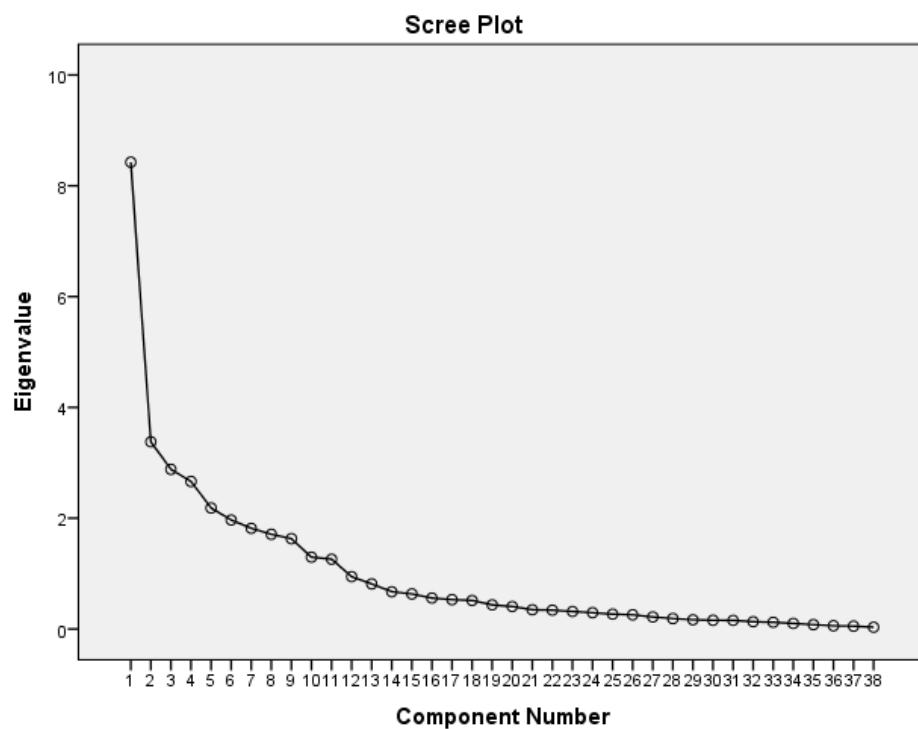
Extraction Method: Principal Component Analysis.

Total Variance Explained

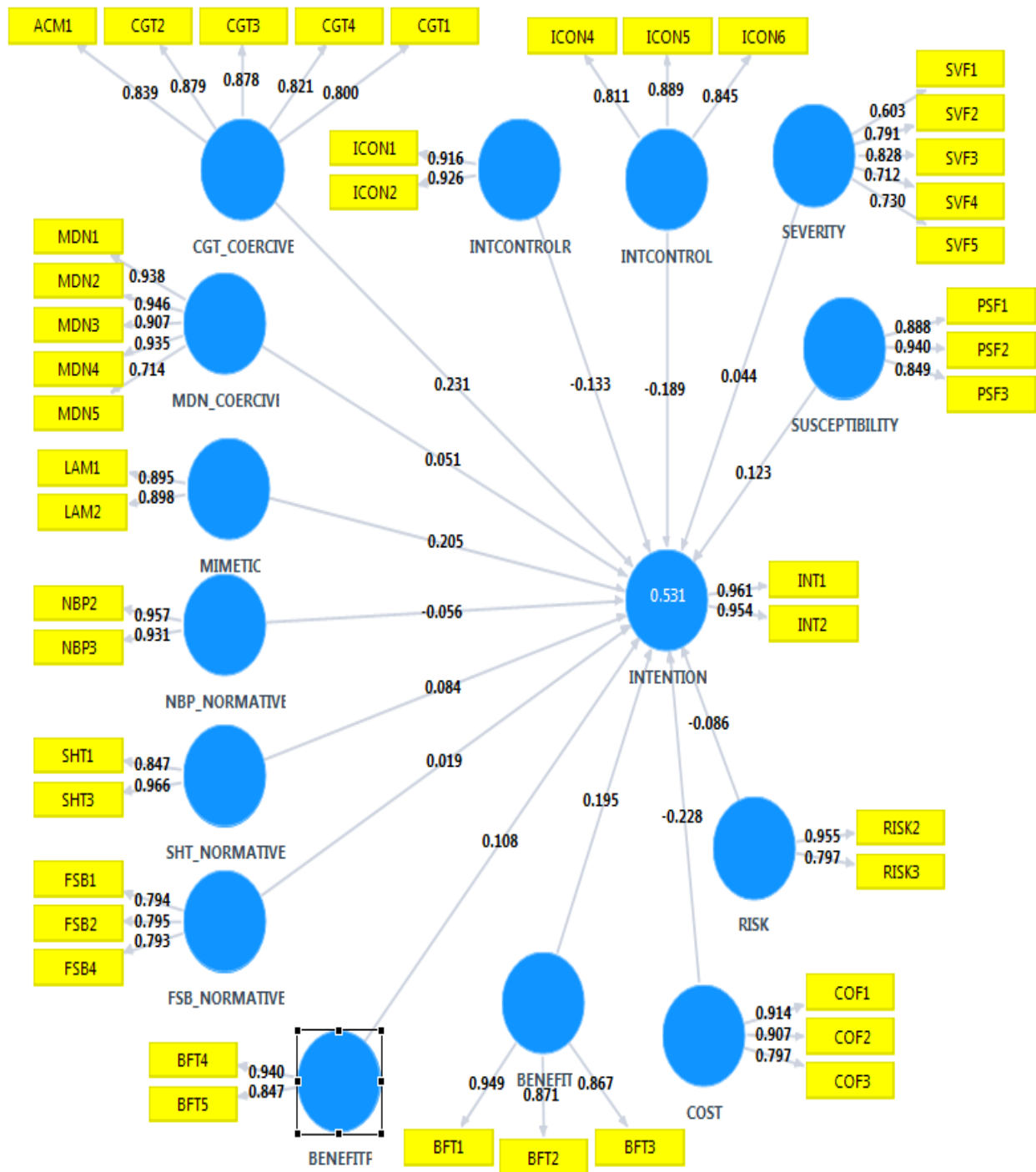
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	8.426	22.174	22.174	8.426	22.174	22.174	6.693
2	3.378	8.889	31.063	3.378	8.889	31.063	5.624
3	2.882	7.583	38.646	2.882	7.583	38.646	3.290
4	2.662	7.006	45.652	2.662	7.006	45.652	4.269
5	2.184	5.748	51.400	2.184	5.748	51.400	3.074
6	1.968	5.179	56.580	1.968	5.179	56.580	3.432
7	1.818	4.783	61.363	1.818	4.783	61.363	2.399
8	1.709	4.498	65.860	1.709	4.498	65.860	3.345
9	1.630	4.290	70.150	1.630	4.290	70.150	2.506
10	1.297	3.412	73.562	1.297	3.412	73.562	1.973
11	1.260	3.316	76.878	1.260	3.316	76.878	3.225
12	.945	2.487	79.365				
13	.814	2.141	81.506				
14	.673	1.770	83.277				
15	.632	1.663	84.940				
16	.559	1.471	86.411				
17	.530	1.394	87.804				
18	.515	1.356	89.160				
19	.436	1.148	90.309				
20	.406	1.068	91.377				
21	.347	.912	92.289				
22	.339	.892	93.181				
23	.315	.830	94.011				
24	.294	.773	94.784				
25	.268	.706	95.490				
26	.257	.675	96.165				
27	.217	.572	96.737				
28	.188	.496	97.233				
29	.167	.439	97.672				
30	.157	.414	98.086				
31	.155	.408	98.495				
32	.131	.345	98.840				
33	.120	.317	99.157				
34	.101	.265	99.422				
35	.079	.207	99.629				
36	.058	.153	99.781				
37	.051	.134	99.916				
38	.032	.084	100.000				

Extraction Method: Principal Component Analysis.

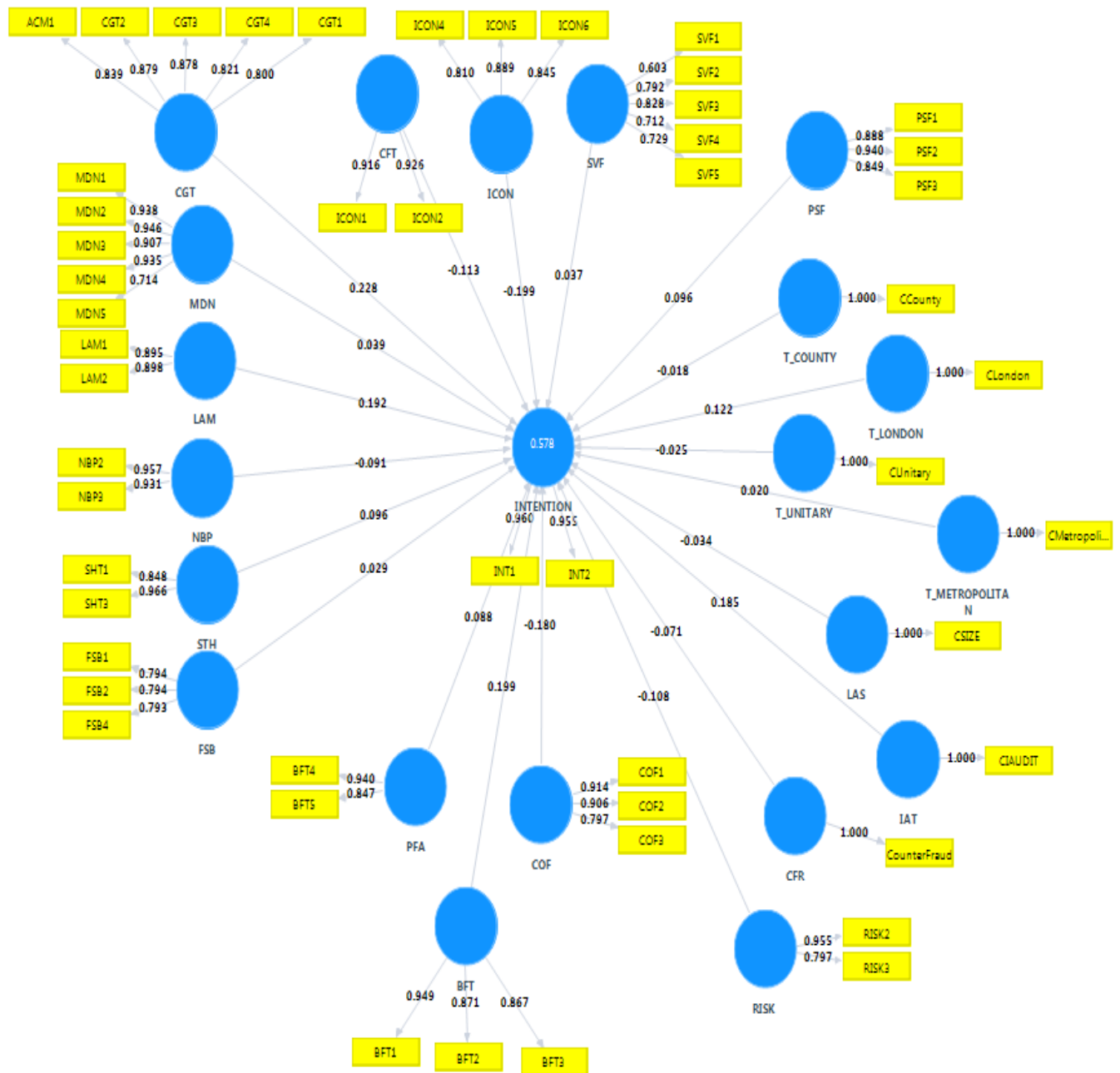
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.



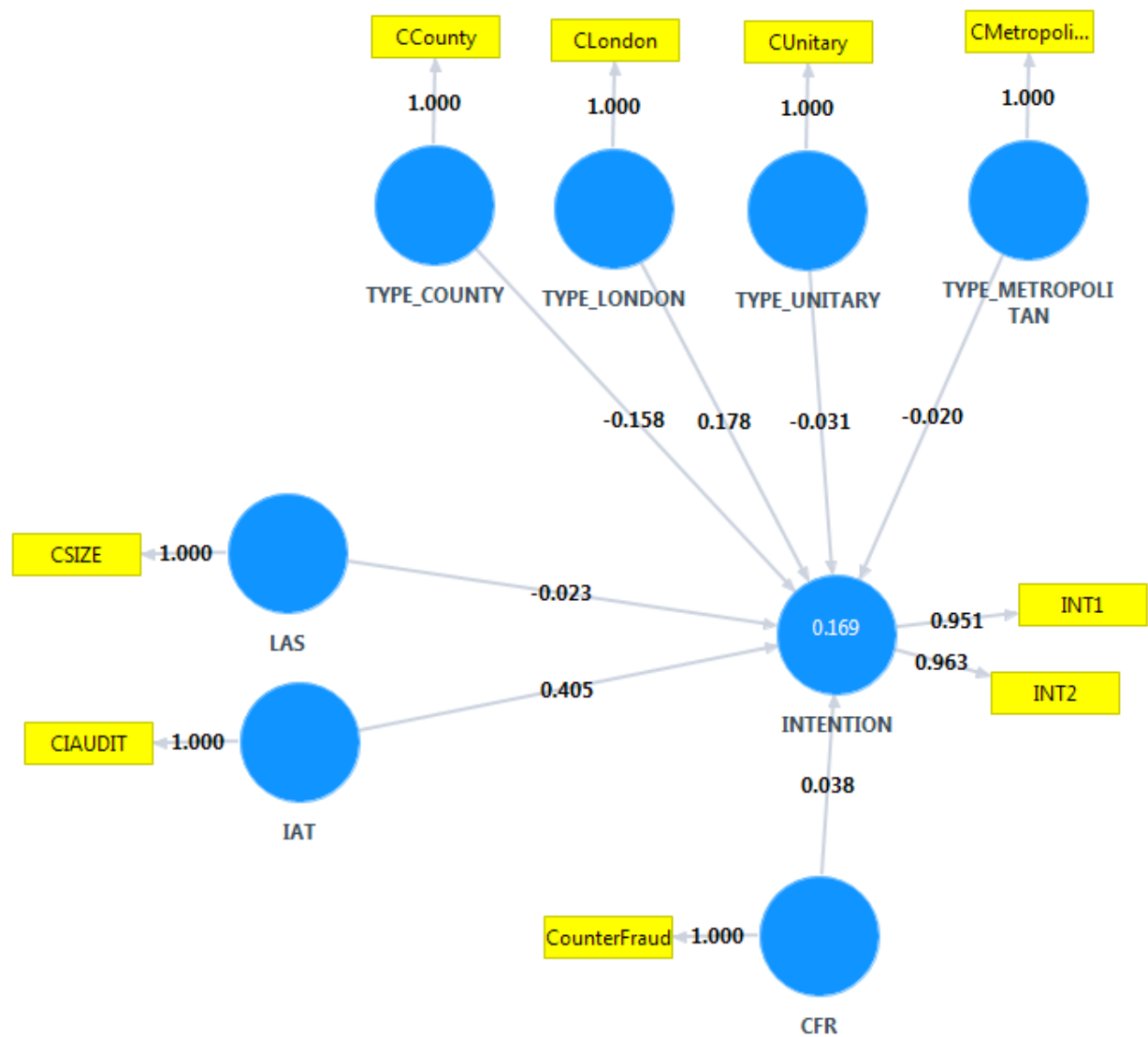
Appendix 8: Result of PLS-Measurement Model-Theoretical



Appendix 9: Result of PLS Analysis –Measurement Model- Full model



Appendix 10: Result of PLS Analysis- Measurement Model-Control



Appendix 5: Result of PLS Analysis-Structural Model-Full

